

DEPARTMENT OF THE INTERIOR
YELLOWSTONE NATIONAL PARK
OFFICE OF THE SUPERINTENDENT

FILE NO.

MONTHLY REPORT

For

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1921.

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MONTHLY REPORT

1921.

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DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

YELLOWSTONE NATIONAL PARK

YELLOWSTONE PARK, WYO.

OFFICE OF THE SUPERINTENDENT

August 10, 1921.

Dear Sir:

The following is my report on conditions in the Yellowstone National Park, and on the operation of the Park, for the month of July, 1921:

GENERAL CONDITIONS:

Never in the history of the park were the road conditions for travel better than they were during the month of July. Scarcely a complaint regarding them was registered, and we had numerous compliments from tourists traveling with their own machines. Dusty stretches were well sprinkled daily, and in many places twice each day. Drags were used following heavy rains, thus keeping the ruts smoothed out. Mud was an obstruction to travel on but few occasions. A severe snowstorm occurred on the morning of July 2nd, during which 2.3 inches of snow fell at Mammoth Hot Springs, followed the same evening by a further fall of 1.5 inches, making a total of 3.8 inches of snow, which broke all records for July. A special bulletin describing this unusual storm was issued by the United States Weather Bureau, and copy is enclosed herewith. This storm was even heavier at other points in the park than at headquarters, and the result was that the southern approach road was closed on July 3rd as being dangerous on account of being slippery; and on July 2nd and 3rd it was necessary to ask the Transportation Company to route their regular cars coming from Canyon to Mammoth via Norris Basin, rather than through Dunraven Pass, for the same reason. No complaints were ventured, however, as the unusual severity of the storm and the danger of travel under the conditions were too apparent.

As usual, there was a marked contrast between the condition of the park roads and of the roads outside the park. Practically all of the approaches to the park had washouts, new work, or other obstructions requiring unpleasant detours, and many comparisons favorable to our

roads were heard. Many inquiries were heard for a better route from those who had experienced "bad going" on their way to the park, and, knowing that whichever way they went, most of them would wish they had gone some other route, such questions were rather hard to answer.

Weather.

The Monthly Meteorological Summary issued by the local office of the United States Weather Bureau is enclosed, and attached to it will be found the special report of July 4th on the most unusual heavy snowstorm that occurred on July 2nd. The following notes from the Weather Bureau indicate the general condition of the weather during the month:

Temperature: Monthly mean, 62.1° above normal. The first five days were considerably colder than normal, the temperature reaching the freezing point on the mornings of the 2nd and 3rd. Light frost was observed on the morning of the 4th, with a minimum temperature of 36°. The lowest July temperature of record is 30°, occurring in 1901. However, freezing temperature has been recorded eight times during the past 34 years. An unbroken period of moderately warm weather extended from the 7th to the 25th, but cooler weather prevailed during the closing days of the month.

Precipitation: Total, 0.93 inch, is 0.25 inch below normal. The first four days were characterized by general precipitation, while during the remainder of the month only occasional light showers occurred. Thunderstorms occurred on but four days--the least number of record for July.

Snowfall: Total depth, 3.8 inches. Snow began on the 2nd at 7:27 A.M. and ended at 11:10 A.M., yielding 2.3 inches, which melted during the afternoon. During the night of the 2-3rd, 1.5 inches of snow fell, making a total depth of 3.8 inches for the two storms. Prior to this year and subsequent to 1887--54 years' record--the only snow that has occurred in July was a trace in 1902 and also in 1911.

Wind: Total movement somewhat below normal, but the maximum velocity of 42 miles from the south on the 20th has been exceeded but twice during the period of record.

Sunshine: Percentage of possible, 69, is about normal.

Travel.

Daily passenger train service on the usual summer schedules was maintained to the three main entrances, and all trains were met by the 10-passenger busses of the Yellowstone Park Transportation Company. Daily schedules were maintained by this Company between all points in the park, as set forth in its approved time tables published in the "Manual for Railroad Tourists", which are distributed to railroad tourists at the park entrances. In one instance, however, (Time Table No. 10, Grand Canyon and Yellowstone Lake to Cody) complaints were received that the schedule given was too slow, and on July 1st the Transportation Company was given authority to change this part of the schedule so as to take 24 minutes less time in making the trip from Turbid Lake to the east entrance.

The Transportation Company also maintained regular thrice-a-week service to Moran in Jackson Hole, beginning July 9th, from Old Faithful Inn, returning to Lake Hotel the following day.

The Chief Ranger's Travel Report for July, with copy of the report for July, 1920, for comparison, is enclosed.

The following tables of travel to include the season up to July 31st, for 1920 and 1921, are interesting for comparison. Figured out by percentages, they indicate a decrease of about 13% in travel to the park by rail, an increase of about 14% by private motors, a little less than 5% increase in total travel for the month of July, and a little less than 10% increase for the season to include July 31st.

YELLOWSTONE NATIONAL PARK, WYOMING

1921 COMPARATIVE TRAVEL FIGURES WITH 1920

JULY 1 to JULY 31

1921

	RAIL	Hotels	Camps	MOTOR	Cars	Passen-	Misc.	Month	Season
Entrance	:	:	:	:	:	:	:	:	:
North	: 1485	: 1455	: 1987	: 6963	: 124	: 10,027	: 14,157:		
West	: 3198	: 1981	: 1694	: 6680	: 66	: 12,325	: 15,708:		
East	: 671	: 876	: 2328	: 7414	: 107	: 9,068	: 10,949:		
South	:	:	: 369	: 1277	: 22	: 1,299	: 1,381:		
Total	: 5354	: 4312	: 6378	: 22534	: 319	: 32,519	: 42,195:		

1920

	RAIL	Hotels	Camps	MOTOR	Cars	Passen-	Misc.	Month	Season
Entrance	:	:	:	:	:	:	:	:	:
North	: 1752	: 1697	: 1641	: 5977	:	: 9426	: 12,575:		
West	: 3753	: 2294	: 1717	: 6414	: 131	: 12592	: 15,742:		
East	: 745	: 870	: 1748	: 6247	: 21	: 7891	: 9,028:		
South	:	:	: 291	: 7694	: 6	: 1100	: 1,114:		
Total	: 6250	: 4369	: 5597	: 19732	: 253	: 31009	: 38483:		

Largest day's travel, 1921,	July 20;	1,477 Tourists.
Largest day's travel, 1920,	August 2;	1,496 Tourists.
Largest day's travel during July 1920;		1,583 Tourists.
Gain in Motorists,		2,802 Tourists.
Gain in Miscellaneous Tourists,		161 Tourists.
Gain in Motor cars,		967 Automobiles.
Loss in rail travel,		1,453 Tourists.

-0-0-0-0-

Labor and Supply Market.

While we have had no trouble in securing what men were needed for our various activities, applications from men in search of employment were not nearly so numerous during July as they were during the previous months.

Supplies have not declined appreciably in price since last month.

II. PERSONNEL:

Employees.

On July 1st, there were 299 employees on duty under this office, which had been increased on July 30th to 404.

The following list shows the number of employees of various classes serving under appointment during the month, with a statement in general of the kind of work in which they were engaged:

<u>No.</u>	<u>Class</u>	<u>Kind of work performed.</u>
2	Ast. Engineers	In charge of engineering work in the park. (1 National Park Service, At Large).
1	Surveyor	Surveying for new construction work at Dunraven Pass (appointment effective July 14th).
7	Clerks	1 Disbursing Agent and Purchasing Clerk; 1 on cost account work and property; 1 on time keeping; 1 on orders, proposals, and vouchers; 2 stenographer-typists on stenographic work, files, etc; 1 on cutting and pasting clippings.
2	Electricians	Read meters, did necessary line work, and operated power plant regular shifts, including Sundays.
4	Foremen	1 in charge of stables at headquarters; 1 in charge of road sprinkling; 2 on road maintenance.
1	Telegraph Operator	Sent and received all Government Western Union messages; operated one shift on telephone switchboard.

<u>No.</u>	<u>Class</u>	<u>Kind of work performed.</u>
2	Telephone Switchboard Operators	Operated telephone switchboard, daily shifts, including Sundays. (1 on intermittent service only).
1	Master Mechanic	In charge of shops, and of repairs to heavy road machinery.
1	Blacksmith	General blacksmith work, including shoeing horses in shop, overhauling and repairing tools and equipment.
1	Painter	Renovated and painted buildings at headquarters, also painted signs.
1	Chief Lineman	In charge of power plant, telephone lines, and of maintenance crews on telephone lines.
3	Laborers	Teaming, freighting, and miscellaneous work at headquarters.
1	Handyman	Worked in storehouse issuing and receiving supplies.
1	Steward and Master of Transportation	In charge of all transportation and of storehouses.
1	Buffalo Keeper	In charge of tame buffalo herd.
2	Asst. Buffalo Keepers	1 assisting Buffalo Keeper; 1 in charge of hay raising operations at Slough Creek.
1	Park Naturalist	Scientific research work and developing museum.
1	Plumber	In charge of general plumbing, and of installation of water systems at public automobile camps.
2	Automobile Mechanics	Repairing motor trucks and touring cars.
1	Watchman	Made hourly patrols during night at headquarters, took care of office, and in charge of watering of lawns at night.
1	Buffalo Herder	Assisted Buffalo Keeper.

<u>No.</u>	<u>Class</u>	<u>Kind of work performed.</u>
2	Carpenters	1 repairing bridges and maintenance work (resigned effective July 31); 1 repaired buildings at Headquarters.
1	Chief Ranger	In charge of ranger force.
1.	1st Asst. Chief Ranger	In charge of northern district and trail crews.
2	Asst. Chief Rangers	1 in charge of southern district; 1 in charge of western district.
24	Park Rangers	In charge of ranger stations; directing traffic, motorcycle patrols, on duty in Chief Ranger's Office.
39	Temporary Park Rangers	On duty in Chief Ranger's office, making patrols, directing traffic, and Information Service, also Guide Service.

In addition to the regular employees listed above under appointment, the following were employed temporarily by the day:

	<u>On July 1st</u>	<u>On July 30th.</u>
Steam Shovel Operator	1	1
Painters	2	2
Plumber	1	1
Carpenter	1	2
Blacksmith	1	1
Lineman	1	1
Foremen	3	4
Mechanics	13	12
Cooks	21	26
Laborers	54	63
Skilled Laborers	52	115
2 Horse Teamsters	19	42
4 Horse Teamsters	24	23
1 Horse Teamster	0	1
Stone Mason	0	1
Waitress	0	1
	<u>193</u>	<u>296</u>
Appointments,	<u>106</u>	<u>108</u>
	<u>299</u>	<u>404</u>

Leaves of Absence.

During July, annual leaves of absence were granted as follows:

Hollis N. Matthew,	Park Ranger, WAE,	5 days-July 1-7
" " "	" " WAE	4 " " 8-11 (Sick Leave)
Roy K. Gray,	Laborer,	1 day - " 6
Edward Pyle,	"	10 " - July 1-10 (Sick Leave)
W.H. Riley,	Mechanic	2 " - " 24-26
Emmet S. Matthew,	Park Ranger, WAE,	3 " - " 23-26
" " "	" " "	3 " - " 27-29 (Sick Leave)

Appointments.

July 12: Homer C. Fear, Buffalo Herder, \$75 per mo. (T).
July 14: Clarence T. Brickel, Surveyor, 150 per mo. (T).

Separations.

Lee Webb, Carpenter, \$1320 p.a., resigned effective at close of July 31.
Ford Purdy, Park Ranger, resigned, effective at close of July 31.

Miss Schuman from ----- to Sept 20

Mr. George E. Goodwin, Chief Civil Engineer, National Park Service, visited the park officially July 26th to 28th inclusive, in connection with the preparation of the estimates for 1923 of all the national parks.

*gla PK
8-22
10 Aug 29
10 for you
Sept 2 no
-4*

Landscape Engineer D.R. Hull was on duty in the park during the month of July, except from the 17th to the 29th, when he made an official visit to the Rocky Mountain National Park. Mr. Hull's most important work in Yellowstone during the month was in connection with the two new ranger stations and community centers to be built at Grand Canyon and Upper Geyser Basin, and the lookout station to be constructed on top of Mt. Washburn.

III. WORK COMPLETED:

(a) Construction of Physical Improvements.

*Added to
me
(at)*

A new public automobile camp was built at Lake Outlet, near the Hamilton Store, during July. The water system supplying this camp consists of a cement reservoir, supplied by an excellent spring. This water is piped about 4,000 feet from the spring to the new camp through eight stand pipes with faucets, located at convenient intervals throughout the camp. The camp was cleared of fallen timber, and four earth toilets were provided.

13's shot + Stenhouse at Big Horn Court #175

(b) Maintenance and Repair of Physical Improvements.

New hand railings were placed on four of the foot bridges across the Firehole River at the Upper Basin. Repairs were made to the walks in the Upper Basin by filling numerous small washouts that occurred last spring, and more and larger drain tiles were installed.

(d) Service to the Public.

Travel was heavier than for any previous month in the history of the park, and more attention was given to this work than ever before. The new Information Office at Park Headquarters was kept open from 7:30 A.M. to 10:00 P.M. daily, including Sundays. One attendant was required constantly, and at times, when crowds are heaviest, two or even three found all they could do to attend to the wants of travelers. At times when there were no callers, the attendants, who are furnished from the temporary ranger force, busied themselves putting up maps, pictures, making improvements, etc., in the office, which is just in process of development.

The large new relief map of the park, which was donated by Mr. and Mrs. Alvah Davidson, of New York, was received during the month and put in place in the Information Office.

Dictate
A total of 11,303 visitors were recorded in the Information Office during the month. The largest number visiting the Information Office in a single day was 751 on July 25th. 4,644 park Rules and Regulations were distributed, of which 3,919 were given out at the Information Office. There were sold from the Information Office 893 pamphlets, 47 contour maps, and 84 Haynes' Guide Books.

In addition to the distribution of Yellowstone Park Rules and Regulations, an unusual demand was found for circulars relating to the other parks, and before the end of the month it became necessary to ask for an additional supply of those relating to Yosemite, Mount Rainier, Glacier, Rocky Mountain, and Grand Canyon.

28 telegrams sent during the month in care of the Chief Ranger's office were delivered to tourists traveling through the park, and in 37 cases parties camping out in the park were located by inquiring friends. In three cases persons wanted by authorities of adjoining states were apprehended and held pending arrest.

Free guide service was furnished tourists of all

July

classes over the formations at Mammoth Hot Springs and at Upper Geyser Basin. At Mammoth Hot Springs two trips a day (morning and afternoon) were made from the Hotel, and three trips a day (morning, afternoon, and evening) were made from Mammoth Camp. A total of 62 trips were made from the Hotel, with a total of 1,495 tourists. A total of 92 trips were made from the Camp, with a total of 2,982 tourists. Two special trips were made, with seven tourists, making a total of 156 trips over the Mammoth Hot Springs formations, with 4,484 tourists.

At the Upper Geyser Basin, three guides made four trips per day (2 from Old Faithful Inn and 2 from Old Faithful Camp), with a total of 7,577 tourists accompanying them.

This guide service has become very popular, and many compliments were heard as to the manner in which they conducted the parties.

Park Ranger Mary A. Rolfe delivered a total of 78 thirty minute lectures during the month, of which 27 were given on the Mammoth Hotel porch, 26 at the Mammoth Camp, and 25 at the public automobile camp.

One park ranger was constantly on duty with the tame buffalo herd, and a large number of tourists visited this herd during the month.

Excellent service was rendered to the public by the hotels, camps, transportation company, and other public utilities, and complaints were few.

Gasoline was sold at last year's prices, namely, 40¢ per gallon at Mammoth Hot Springs, and 45¢ per gallon at other points in the park, until July 10th, but these prices were in proportion to prices outside of the park and caused no complaint. On July 6th a circular letter was sent to all public utilities interested in the sale of gasoline in the park (copy enclosed), reducing the price of gasoline 5¢ per gallon, effective July 8th, and also gave them until July 15th to show why a further drop of 2¢ per gallon should not be made. These dealers appealed to First Assistant Secretary Finney, who was then visiting the park officially, who heard their arguments, and gave them until July 10th to comply with the circular. No further reduction in the price of gasoline was thought advisable.

Mr. A. Alstrom, Traveling Passenger Agent,

Great Northern Railway Company, was stationed in the lobby of the Mammoth Hotel, where he gives to inquirers free information relating to Glacier National Park.

The Yellowstone Park postoffice became a second-class post office on July 1st. Efforts were made to have it continued as a third-class office, as, due to the peculiar conditions here, the public could be better served since the laws of the Post Office Department do not permit a second-class office being opened for general distribution of mail on Sundays, but the regulations of the Post Office Department were sustained. While mail is received and sent out on Sundays the same as on week days, visitors to the park are unable to secure their mail on Sundays unless they are stopping at the hotels or camps.

IV. WORK IN PROGRESS:

(a) Construction of Physical Improvements.

The stone building to be used as a shelter and fire lookout station on Mt. Washburn was started and approximately 50% completed. The building is made of rock laid in cement mortar. It is 18 feet square, of one story, with an 8 foot square cupola, where a fire lookout will be stationed.

The work of replacing the old log retaining walls along the Yellowstone River, at Canyon, near Chittenden Bridge, with permanent masonry walls, was started July 1st and continued throughout the month. The new walls are twenty inches thick at the top and the face given a batter of three inches to the foot. The rock, which is secured from a quarry nearby, is laid in cement mortar. 118 lineal feet of retaining wall was completed, having an average height of 11 feet and containing 304 perch. The top of the wall is made level with the grade of the roadway. Spaced 16 feet apart, rock piers are extended up twenty inches above the top of the wall. Nine inch logs are placed on top of the piers to act as a guard rail.

Work on the new concrete bridge to be built over the Gibbon River, at Norris, was started and good progress made excavating for the abutments. A temporary log bridge was built near the ranger station for use while the new bridge is in course of construction. The old timber truss bridge was dismantled.

The work of constructing a 2-room log cabin, dimensions 16 x 30 feet, with a log barn 18 x 40 feet, was begun on Slough Creek about 4 miles above the present Slough Creek Hay Ranch. This will be used by the Assistant Buffalo Keeper with the idea of developing another meadow for raising hay for elk and other wild animals. This work was more than half completed at the end of the month.

*No progress
partially underway*

A drift fence was built of heavy logs, extending from the rim of Opal Creek to the rim on Mount Norris across Lamar Valley, for the purpose of holding the tame buffalo herd back during the summer months so they will not interfere with the haying and other work at the Buffalo Ranch. This fence is 7 feet high from the ground to the top rail, with panels of about 22 feet, built in the form of a worm fence. It is furnished with three gates, placed at convenient intervals, which can be opened when it is desirable to let the buffalo go back and forth. Across the Lamar River it is provided with a floating boom, in two sections, anchored with chains or cables, so arranged that they can be taken down during high water, otherwise they would be carried away. This work was about 90% completed at the end of the month.

*Furnished
July 10
cost about
\$1000.00*

The work of building a new log ranger station on Crevice Mountain was begun early in the month, and at the end of July was completed with the exception of the roof, ceiling, and partitions. This consists of a main part, 16 x 32 feet, divided into two rooms about 15 x 16 feet, with another room in the form of an "L", 16 x 16 feet, for use as a kitchen. The log walls of the building are 8 feet high, and the roof has a pitch of 45 degrees. It extends 12 inches over the eaves, 2 feet over the east and west ends, and 6 feet over the north end, forming a shelter at the door.

*Completed
end August*

(b) Maintenance and Repair of Physical Improvements.

Two auto truck sprinklers and seventeen horse drawn sprinklers were operated during the month, sprinkling twice daily about 107 miles of roads on the loop. Several new supply tanks were installed, flume rebuilt, and the system repaired generally.

*July 1
5
" 6, 7, 8-19
10 & 11
12 & 13*

Widening operations were resumed in Dunraven Pass on July 1st. This improvement, which was started two years ago, will be finished this season. At the end of the month the steam shovel had moved a distance of twenty nine hundred feet and excavated approximately

6,000 cubic yards of material, of which about 75% was solid rock.

Fifteen small crews were stationed during the month at different points in the park to maintain the roads by grading, installing culverts, cleaning ditches, and making general repairs. Three larger crews, one operating in the East Forest Reserve, another in the South Forest Reserve, and the other in the West Gallatin division, maintained the roads in those sections.

(c) Miscellaneous Improvement Work.

Summary
The painters completed the painting of the exterior of the Tower Falls Ranger Station and began the painting of the exterior of the buildings at park headquarters. Up to the end of the month they completed three of the stone buildings, including the old "Bachelor Quarters", now used as the Information Office, and the two stone buildings adjoining it on the south. They also painted about 300 signs and posted them at points throughout the park for the information and guidance of the public.

Same
The plumbers, in addition to the construction work already described under a previous heading, did the usual maintenance work on the water and sewer systems at park headquarters, including the connecting up of 14 new lawn sprinkler pipes.

Same
Several men were kept busy throughout the month keeping the public automobile camps clean and providing wood for the large number of campers occupying them. The camp at Old Faithful was extended by cutting out trees, clearing roads, and providing two new toilets. Two toilets were also provided at the Lone Star Geyser and two at the public camp at Canyon.

Carpenter Shop: Two carpenters worked throughout the month getting out timber for the Mount Washburn Lookout Station; making toilets and miscellaneous work for the public automobile camps; also wood work on automobiles, wagons, and passenger automobiles; and miscellaneous work at the Information Office and Museum.

Blacksmith Shop: Two blacksmiths worked throughout the month on general blacksmith work in the shop, repairing vehicles, shoeing horses, etc.

Garage: Two mechanics were employed throughout the month in the garage, and one at the motorcycle garage,

keeping the motor vehicles in running order.

Two small crews were kept in the field during the month repairing telephone lines--one between Lake Junction and the east entrance completed 9 miles of heavy repair work, and one between Thumb Station and the south entrance resetting and putting in new poles, when necessary, over twenty miles of line.

The power plant was run 24 hours daily, including Sundays. The total current generated during the month was 20,390 kilowatt hours of current. Of this production, 6,947 kilowatt hours of current were sold to public utilities operating at Mammoth Hot Springs for lighting and power purposes, 1,286 kilowatt hours for lighting streets, and the balance, 12,157 kilowatt hours, were used for lighting Government buildings and furnishing power to our shops. The peak load of 62 kilowatt hours occurred at 10:00 P.M., July 3rd.

Park Naturalist Skinner prepared the usual set of monthly notes on flowers, geology, animals, and birds. 49 sets were posted on bulletin boards, and 1,921 sets were given out from the Information Office. A few labels were made for exhibits in the Information Office; two bird charts, and a few maps were placed there. About fifty specimens of geological formations were collected for the Museum. Scientific activities in the park were supervised. The work in the Information Office was supervised closely from the 8th to the 19th and assistance given where needed. 27 talks were given on "Animals", "Mammoth Hot Springs Formation", "Geysers", "Indians", "Birds", "The Whitebar Elk", and other miscellaneous subjects. Data on natural features were collected daily. Inspections of forests were made and reported. Other studies pursued by him resulted in his notes on Seasonal Changes and Natural Phenomena, as embodied in this report. Eight days were devoted to special work assigned by the Superintendent.

The office force handled the usual large amount of routine work, including reports, vouchers, circulars, etc. Office hours were maintained from 8:00 A.M. to 5:30 P.M., and it was necessary to work overtime in many instances to keep the work in hand. A total of 1,290 official letters were received, and 1,330 official letters were sent out during the month.

Haying Operations: On July 22nd, Buffalo Keeper B.C. Lacombe, with a crew of 20 men, began haying on the

*Small crew cut about 500 T. Lamm k
- 14 -
Timothy - Done Aug 29*

Hay done Aug 12

Rosebough
Aug 12 to 31
170 T?

meadows at the Buffalo Farm. The expenditure for the cutting of this hay during the month amounted to \$819.90. The crew has cut approximately 350 tons of hay and has re-stacked about 65% of the hay in the meadow. This work will be completed not later than August 30th if present conditions prevail.

Tons
150 mon 6
Rosebough
Old hay left

The work of haying on Slough Creek was begun on July 19th under the direction of Assistant Buffalo Keeper Ira D. Fleming. Progress at this point has been slow due to the distance from the base of supplies.

Done Aug 23
280 Tupper
T Lower

Another small crew was placed in the field at Yancey Meadows, on July 20th, where it is expected that more than 100 tons of hay can be cut and stacked for winter use.

600 Total
Est.

The hay on the field near Gardiner, Montana, was cut during July, the work being completed on the 23rd. It is estimated that about 100 tons of good hay have been put in stack at this point, but the exact amount will be determined by measurement and reported later. This field was irrigated once in July after the hay was harvested, and five days were spent cleaning out the main ditches.

148.2
5

741.0

Plans were made to expend about \$2,000 in improvements to the south road between the Buffalo Fork bridge and Twogwotee Pass, and request was made to deposit this sum subject to the order of the Supervisor of the Teton National Forest, who was to take charge of the work. When this money was deposited, I was under the impression that the crew was to be sent out about July 12th. On July 26th, Mr. E.E. Cheney, of the Lander Commercial Club, and Mr. C.E. Shippen, representing the citizens of DuBois, Wyoming, called at my office and reported that no work had been done on this road up to that time, and urged that I allow the citizens of Lander and DuBois to place this road in good shape for travel. I thereupon wired you, under date of July 27th, requesting that you secure the re-deposit of the \$2,000 transferred to the Forest Service, so that I could have this work rushed to completion. It now seems that the Forest Service, as well as the State Highway Commission, do not favor spending any of this \$2,000 fund for temporary work, but prefer holding it for permanent construction work this fall.

As the matter stands now, I am suggesting that representatives of the commercial clubs of Lander and DuBois meet with the officials of the Forest Service and of the State Highway Commission and settle on a policy

that will be mutually agreeable to all concerned. I have also advised them that if they cannot arrive at such an agreement, I shall use my own judgment as to what should be done with the fund in question, and that I shall probably decide upon emergency repairs this year and next spring rather than toward permanent work, as our funds are appropriated primarily for maintenance and not for construction.

Trails: Park Ranger Henry Anderson, assigned to trail and cabin work in the southern and eastern districts of the park, completed the repairs on the Cascade Creek Snowshoe Cabin and cleared the trails from Lewis Lake, at Heart Lake, from Heart Lake to Snake River Station via Basin Creek, and the Snake River Trail to Fox Creek, and corduroyed all of the Bechler River Trail from Snake River to Bechler River Stations. He is now building a new Snowshoe cabin at Fox Creek.

Rangers at the Lake Station have cleaned out the Pelican and Mist Creek Trail to the Coal Creek Snowshoe Cabin, the Jones Pass Trail, the Upper Yellowstone Trail, and the Lynx Creek Trail. Rangers at the Snake River Station have cleaned out the boundary trail to the Bechler River Station, and the Marysville Road and Trail from the Snake River Station to the Harebell Snowshoe Cabin. Rangers at the Bechler River Station have cleaned out the west boundary trail to Buffalo Lake.

Under the direction of Park Ranger Sam T. Woodring, temporary park rangers at the Canyon Ranger Station have, during spare hours, repaired the trail to Inspiration Point, to the Seven-Mile Hole, and to the Silver Cord.

Rangers at Riverside Station have cleaned the trails from the Riverside Station to the South Riverside Snowshoe Cabin, and from the Riverside Station to the Grayling Cabin Station, via the old Yellowstone horse pasture, and from Riverside Station over part of the trail to Grizzly Lake via Cougar Lake.

Rangers at Gallatin Station have cleaned the trails from Gallatin Station to Grayling Cabin, to Sportsman Lake Cabin, and along the west boundary over the Bacon Rhine.

Rangers at Tower Falls have cleaned the trails from Tower Falls Station to Amethyst Mountain, to Elk Tongue Creek, to Hellroaring, and to the north boundary line on Slough Creek, and part of the Specimen Ridge Trail.

Rangers at Soda Butte Station cleaned the trails

from Soda Butte Station to Coal Creek, the east boundary line of Soda Butte Creek, the north boundary line of Pebble Creek, and part of the Cooke City trail.

Park Ranger Hans Larson, assigned to fire patrols from headquarters, cleared the trail from headquarters to Sportsman Lake, to Grizzly Lake, and part of the trail over Sepulchre Mountain.

✓ Sanitation: Mr. A.P. Miller, Junior Assistant Sanitary Engineer, U.S. Public Health Service, continued throughout July the work begun in June. His work was confined principally to the testing of water supplies, investigation of sanitary conditions, and inspection of food supplies at the hotels and camps.

✓ Mr. H.B. Foote, of the Department of Public Health of the State of Montana, visited the park during the month and offered the cooperation of the State in this most important work in the park.

Improvements by Park Utilities.

The Yellowstone Park Hotel Company began the construction of a new men's dormitory at the Canyon, to be completed some time during the present month. This Company also did considerable work renovating rooms at the Canyon Hotel which had formerly been used by employees. ✓

5 The Yellowstone Park Camps Company made considerable progress in the improvement of sanitary facilities at the Old Faithful Camp. Flush toilets are being installed in connection with the new sewer system at this camp to take the place of the old dry earth toilets heretofore in use. A number of new tents were erected at the various camps to provide additional facilities for increasing crowds, and improvements were made in sanitary conditions at almost every camp in the park. ✓

Mr. C.A. Hamilton continued the work on his new store at Lake Outlet, which will probably require the most of the season before it is finished. He also had a small crew of men at work on the addition to his Upper Basin store.

V. WORK BEGUN;

Activities under this heading reported elsewhere.

VI. PLANS OR PROPOSED WORK;

Plans for the month of August contemplate the con-

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continuation of the work in progress as noted under Section IV. On July 15th bids were opened providing for the construction of 2 Combined Ranger Stations and Community Centers, to be built of logs (one at Upper Geyser Basin and one at Grand Canyon), under plans approved in your office. Copies of notice were posted at various places in villages of this section in Montana and Wyoming. The contract was awarded to the lowest bidder, Mr. Merritt I. Tuttle, of Fromberg, Montana, and on July 31st contract with Mr. Tuttle covering the construction of these buildings was forwarded for your approval. The cost of the work under these bids will be \$6,235 for the Upper Geyser Basin building, and \$6,130 for the Grand Canyon building. Mr. Tuttle has already begun the construction of these buildings and expects to complete them before the close of the season. He has a very enviable record for work of this kind and excellent results are expected under this contract, which is considered a most advantageous one.

Due to the unprecedented heavy travel, the public automobile camps at most points have proven inadequate. It is contemplated extending the camp at Mammoth Hot Springs during August so as to provide more room. It is also contemplated providing an additional camp at Lake Outlet to be known as Camp No. 2, to be located near the Fishing Bridge on the Cody entrance road, where it will be necessary to provide a new water supply, requiring that the water be piped a distance of 4,000 feet.

Another important piece of work which is contemplated is the providing of guard rails at the south end of the Cork Screw Bridge below Sylvan Pass. Several complaints have been received that the road is dangerous at this point, and one Ford car went over the bank there during the season.

VII. POLICIES:

No special change in policies was made during the month.

VIII. COST OF OPERATION:

This information will be furnished from the Monthly Cost Report for July, which has not yet been completed, but which will be forwarded at the earliest practicable date.

IX. OTHER MATTERS OF INTEREST:

Wild Animals.

Buffalo, tame herd: This herd was kept on Mt. Morris and held back from the meadows at the Buffalo Ranch by the new drift fence which was in process of construction. The usual show herd, consisting of 19 selected bulls, was maintained at Mammoth Hot Springs ✓ Corral, and required the undivided attention of one park ranger. He estimates that about 20,000 tourists visited this herd during July.

Buffalo, wild herd: The wild herd of buffalo was not molested during the month, as patrols to the summer range of this herd are not necessary at this season of the year.

Antelope, deer, elk, and mountain sheep were seen occasionally along the roads by travelers.

Bears: Bears were quite numerous at the garbage dumps at Canyon, Lake, and Upper Basin, and were the usual source of attraction to travelers. As high as 19 were seen at the Canyon and 18 at the Lake at one time. The small black bear known as the "Hold Up Bear" is still in evidence along the road between Thumb and Lake Outlet and is seen and fed daily by travelers. During the month it was necessary to kill two bears, one an old brown bear with cubs, which had been chasing tourists at the auto camp near the Lake Hotel, the other a brown bear that had been injured in a fight with a Grizzly on the night of July 20th and was in such bad condition that it was unable to leave the garbage pile. In each instance the carcasses were destroyed by burning.

Grazing: There is an excellent stand of forage grasses throughout the park and the grazing is excellent. The yield of hay at the four points where it was harvested during the month was heavy in all cases. ✓

Fishes.

Fishing was fairly good in most of the streams and was reported to be specially good in waters that are located far enough away from the main arteries of travel so they are not visited by many tourists.

Representatives of the United States Bureau of Fisheries continued the usual operations at the Lake Hatchery during the month. The work at Soda Butte Lake was finished up during the month, and the fish eggs that were gathered there were transferred to the Lake for further development before planting. The employees of

the hatchery completed the cabin at Soda Butte Lake which was begun by park rangers in May.

No fish were planted in park waters during the month, but some were shipped out by the Fisheries Bureau. My report of fish planted in June (page 18 of monthly report) was erroneous, the total number of Eastern Brook Trout planted having been 82,000, instead of 15,800 as reported. This report should have showed the following figures:

80000 Rainbow from Coeur d'Alene July 15 in Gibbon R. Valance

Shipped from the Federal Hatchery, at Bozeman, Montana, 72,000 small fry, planted in Elk Creek, a small tributary of the Yellowstone River in the Tower Falls District.

Shipped from the State of Montana Hatchery, at Emigrant, Montana, 10,000 large fingerlings, planted 5,000 in Glen Creek and 5,000 in Lava Creek.

Reports from Superintendent Charles B. Grater, in charge of the United States Fish Hatchery, at Yellowstone Lake, on July 21st, indicated that the total collection of eggs of the blackspotted trout in the park for the season would be approximately 6,000,000, and that arrangements had been made by the Commissioner to ship out all but about 1,000,000 of these. This is not in accordance with our policy of increasing the number of fish replanted in park streams from year to year to provide for the greater demands on account of the increased travel. The number gathered last year was greater, and about one-third of those gathered were planted in park waters. The failure to secure the usual crop of eggs this year indicates depletion in streams adjacent to Yellowstone Lake, and the necessity of planting a larger percentage of those taken, back in park waters. On July 21st I telegraphed the United States Commissioner, at Washington, as follows:

"Superintendent Grater advises me additional orders for black spotted eggs will take approximately half of quantity reserved for Park, leaving us only about two million five hundred thousand. We should by all means have from four to five million eggs hatched here this year and planted in park. Situation is serious and trust you can countermand orders placed in order that we can make plants as worked out between Superintendent Grater and myself. Inability of hatchery to secure eggs this year in many streams formerly used shows how great is depletion. Please answer." (Signed) H.M. Albright, Superintendent.

Superintendent Grater was informed by telegram from the Commissioner, received the following morning, that 4,000,000 fish would be allotted to park waters.

These eggs and fry will be ready to begin planting about August 10th. A new method of planting will be adopted in cases where isolated streams are to be reached by pack train. Instead of trying to transport fry by pack train, the eyed eggs will be taken in cases, the capacity of a pack horse being about 200,000 in this form, where but eight to ten thousand fry only can be taken on one horse, and besides the eggs keep better and can be taken longer distances without loss. The eggs are planted in the beds of small streams and covered with sand.

Seasonal Changes.

Seasonal changes are indicated by the following natural conditions:

Botanical:

Grasses and other forage made a fine growth up to the middle of July, then the lack of rain stopped the growth and curing "on the stalk" began.

Below the 6,000 foot level, the following began to bloom: *Mentzelia* about the 1st; Sunflowers and Goldenrod about the 20th.

In the neighborhood of Mammoth: large Beardtongue about the 2nd; Fireweed about the 8th; small Beardtongue about the 9th; Rocky Mountain Bee Plant about the 12th; and elderberries, gooseberries, and red raspberries were ripe on the 26th. Near Tower Falls; the first Twin Flower was observed on the 5th; Fireweed on the 6th; and great masses of Wild Roses reached the height of their season on the 7th, then declined until the 26th.

On the Park Plateau: The great abundance of Little Elephant blooms was notable until the 20th, when the wet meadows on which they lived began drying up; thereafter Monks-hood and Fringed Gentians were unusually abundant in the same localities. Flowers began blooming: Stone Crop about July 9th; Monks-hood about the 20th; yellow Water Lilies on Isa Lake on the 21st, and Columbines were common on the 2nd and a few persisted throughout the month. Flowers on Hayden Valley began drying up about the 22nd.

Dogtooth Violets, yellow Violets, Lungwort,

and brilliant Indian Paint Brush were observed on both sides of Mount Washburn on the 6th, and white Phlox and Alpine Forget-me-nots on the summit on the same day.

Birds:

The only migratory movements noted were: Brewer Blackbirds began to gather in flocks on the 14th, and the Magpies arrived on the 26th.

Almost all of our birds were nesting in July. Cliff Swallows were building nests from the 1st until the 26th. Osprey on nests below Inspiration Point hatched on the 15th and at Grand View a week later. A brood of Mallard hatched on the 1st near Junction Butte, and one of Richardson Grouse, nearby, on the 8th.

Bird songs were heard for the last time: Meadowlark and Robin about the 1st; Pink-sided Junco and Audubon Warbler about the 7th; Song Sparrow about the 10th; and White-crowned Sparrow about the 22nd.

Animals:

The antlers of the majority of the Elk are not quite grown although the Mule Deer have completed their growth. Antlers of both species still in the "velvet". Practically all large animals except the Bears and a few Mule Deer about West Thumb and Canyon have retired from the disturbance of the tourist routes. From the number seen, I believe there are about 120 antelope kids this year. 12 adult wild buffalo and 4 calves were found near the mouth of Timothy Creek. The condition of all animals continues good.

From the early arrival of magpies; the building of winter nests by ground squirrels and chipmunks; and the movements of the Rocky Mountain Jays (camp robbers); it seems best to look for an early fall and winter.

Patrols, fire, m. & formation

Arrests and Violations of Law.

The following arrests were made and the parties dealt with as indicated, namely:

<u>Date</u>	<u>Name</u>	<u>Cause</u>	<u>Punishment</u>	<u>Arresting Ranger</u>
July				
1st	C. Bakki,	Violation of Fishing Regulations,	\$10 and costs	Emmet Matthew
5th	T.L. Nylan,	Speeding	25.00 & costs	do
7th	Jack Bristol,	"	\$25 and costs	R. Sprinkle.
11th	Will Donald,	Reckless driving & obnoxious conduct,	Reprimanded by Superintendent	W. Bishop

<u>Date</u>	<u>Name</u>	<u>Cause</u>	<u>Punishment</u>	<u>Arresting Ranger</u>
July 11th	A.B. Ogden,	Speeding	\$25 and costs	E. Burkett
" 15th	A. Crease,	"	\$25 and costs	do
" 16th	W.G. Fisher,	"	\$25 and costs	L.D. Mink
" 18th	T.E. Keefe,	"	Reprimanded by	J.T. Needham
			U.S. Commissioner.	
" 17th	Arnold C. Stamm,	Reckless driving	\$25 and costs	P.A. Cummings
" 17th	Homer Rothlitzar,	Speeding	\$25 and costs	R. Sprinkle
" 15th	L.E. Boyitt,	"	\$25 and costs	do
" 19th	P.J. Ricks,	"	\$10 and costs	do
" 22nd	W.P. Connel,	Leaving fire	\$10 and costs	E. Matthew
" 22nd	W.E. Westlake,	do	Acquitted.	
" 23rd	G.B. Selvidge,	Speeding	\$25 and costs	L.D. Mink
" 24th	A.T. Shane,	do	\$25 and costs	H.N. Matthew
" 24th	John Herr,	Unsealed firearms	\$15 and costs	R.R. Wisdom
" 27th	I.H. Denton,	Speeding	\$25 and costs	H.N. Matthew
" 29th	H.M. Cady,	"	\$10 and costs	J.T. Needham
" 8th	Jack Charles,	Speeding and obstructing traffic	Reprimanded by	
			Asst. Supt.	
" 13th	R.J. Parker) N.O. Bowman,) Phil Mockel)	Violation of fishing regulations	Reprimanded by	P.R. Wylie
			Superintendent.	
" 21st	H.C. Allen) Pleasant Smith)	Selling intoxicating liquors	Ejected from	E. Burkett
			Park.	
" 29th	Frank J. White) R.J. Wells) Thomas D. Dwyer) W.H. Gruenhagen) Otto Breil)	Violation of Volstead Act	Negotiations are being made to bring U.S. District Attorney of Wyoming to headquarters to try these men.	
" 30th	H. Brandon,	Speeding	Reprimanded by	P.A. Cummings
			Asst. Supt.	
" 23rd	L.J. Spangelo) Clarence A. Damm)	Leaving fire	Dismissed	W. Bishop
" 29th	J.D. Silverman) Arthur Schoenstadt) Carl Newhouse) Samuel C. Houston)	Defacing formation and obnoxious conduct	Dismissed acct insufficient evidence.	R. Frazier

Forest Fires.

During July reports were received of 51 small fires. Fortunately, all of these were extinguished promptly and none of them resulted seriously. The following is a list of the most important of these fires:

A small underground fire was reported burning at Shoshone Point, by tourists who were crossing the Continental Divide, on July 19th. Rangers were dispatched from Canyon, Thumb, and Upper Basin, and extinguished it before any damage had been done.

On July 5th four fires were left burning at Canyon and Lake by campers. The violations in these cases did not warrant the expense of a trial, and they were released with reprimands..

Campers reported at the Thumb Station, on July 8th, that a fire was burning in the Snake River district near Lewis Lake in a heavily wooded section. The trail crew, headed by Henry Anderson, working out of the Snake River Station, was dispatched to the scene of the fire and succeeded in getting it under control after it had covered an area of approximately one hundred square feet.

On July 17th reports were received at the Riverside Ranger Station that a fire was burning three and three quarters miles west of Madison Junction. Park Rangers Purdy and Kaplan extinguished it before any damage had been done.

Motorists reported at the West Yellowstone Checking Station, on July 18th, that a fire was burning $2\frac{1}{2}$ miles north of West Yellowstone on the Gallatin County Highway leading through the park via the Gallatin County Forest Reserve. Park Ranger Ford Purdy succeeded in extinguishing this fire before any damage had been done.

A fire was reported on the evening of July 28th at the top of Terrace Mountain. This was found to be a small camp fire left by a hiking party, and was extinguished.

Accidents and Casualties.

Among the other records broken in July, was the one for accidents and deaths. Three deaths occurred in the park - one from an automobile accident, the others from natural causes. Six serious and eight minor accidents, and seven collisions of more or less importance were reported. A list of the most important cases follows:

Miss Emma B. Childers, of 1500 Broad Street, Wichita Falls, Texas, was killed in an automobile accident, which occurred about 5:30 P.M., July 15, 1921, at a point about eleven miles from the Lake Junction on the Cody road. Miss Childers was killed instantly, her neck being broken and several ribs fractured. Her body was brought to park headquarters (Mammoth Hot Springs), and prepared for shipment to her home by Undertaker G. Walter Selby, of Livingston, Montana.

The account of the accident, as given by the occupants of car No. 157, Wyoming License No. 32861, a 10-

passenger bus of the Yellowstone Park Transportation Company, Harry Dooley, driver, is as follows:

Mr. Joseph Wenstrup, of 3120 Murdock Avenue, Cincinnati, Ohio, who with his wife and four children were occupants of the car, stated that the car was going a little fast, but not twenty miles an hour. A little ahead was a bend, car curved off the road, driver tried to get car back to center of road, turned wheel, and went over. Says driver was not reckless and used every precaution.

Miss Catherine Bohn, of 219 West 28th Street, Norfolk, Virginia, who was traveling with Miss Childers and has known her for three years, states that as far as she could see the driver was using every precaution; was a very careful driver, not at all reckless. Did not know the reason, but car suddenly went over. Miss Bohn was not injured.

Miss Irene Spitz, of 615 West Van Trees, Washington, Indiana, stated that the driver was not at all to blame, but could not say just how it happened; car was going down hill, suddenly left the road, driver tried to get car back onto road. Just few scratches, not any personal injury.

Miss Edith Flick, of Washington, Indiana, badly bruised left cheek, left wrist swollen, and pain in throat and chest; states had a puncture, and it appeared to her that car went a little faster after tire was changed, but could not say. Driver was very careful, but seemed to go little fast after puncture.

Miss Eliza Hyatt, of Washington, Indiana: Head struck, face swollen, left limb and back hurt. Driver used reasonable care and not at all to blame. Something must have been wrong with motor.

Injuries sustained were:

Emma B. Childers	- Instantly killed.
Jos. Wenstrup	- Shoulder wrenched slightly.
Albert Wenstrup	- Left hip. Slight pain felt. O.K. next morning.
Helen Wenstrup	- Head bruised.
Alma Wenstrup	- Nothing serious. Very slight bruises.
Florence Wenstrup	- Left shoulder. Pain over circumflex nerve. No external evidence heel and cut mal. tibia.
Mrs. Jos. H. Wenstrup	- Pain in chest, right heel and limb bruised and sprained.

The general opinion of all who were connected with the accident was in favor of exonerating the driver of the car from any blame, and that it occurred through some unknown unavoidable cause.

On July 25th, about 3:15 P.M., a ten-passenger car belonging to the Yellowstone Park Transportation Company, over-turned on the road about 13 $\frac{1}{2}$ miles from the Lake Junction at Teton Point. The car was driven by Mr. Al Whitman.

The statements of the passengers in the car were as follows:

Mr. and Mrs. Leon Hornstein and Charlotte and Annetee Hornstein (Age 9 and 7 $\frac{1}{2}$), of 5636 Kenwood Avenue, Chicago, Illinois; Had just passed working crew with horses on road; driver cut on the outside of road to pass; appeared to be fresh dirt, very soft clay; car skidded and turned over. Have nothing to say in regard to carefulness or carelessness of driver. I drive several cars myself and know what I would have done in the case, but will not criticize anyone else driving. Husband and two little girls were pinned under car. Rear wheels had chains on.

Ethel and Berril Ingram, 6217 Spruce Street, Philadelphia; Driver was not careful. I am not familiar with the roads in this country, but what is two minutes time. Never in my life had I fear in my heart, as all the time driving in from Cody, I inquired if the roads from Pahaska were safer, as it appeared to me, starting at Cody, the driver was trying to make time, and I believe, although not certain, that he passed several yellow cars. Am not quite sure of this.

After leaving Sylvan Pass, we passed a road scraper. Instead of waiting for the old man to pass, the driver takes wide turn of the wheel and passed him on the outside of the road, where there was apparently fresh dirt, and after all the rain, the road was soft and clay, car skidded and went down. Was raining when we left Cody. Driver kept looking at rear wheels during most of the trip. Cannot say whether chains were on or not. Car was completely turned over with all four wheels in air.

Mrs. Chas. M. Power and Florence Power, 4805 Davenport, Omaha, Nebraska; Knows driver did not do intentionally, but who else is to blame. Did not use caution or care. Did not notice anything on the road. Car slipped, driver jumped out over wheel. Pinned under wheels of the engine.

Mrs. Power: Driver did his best to get car back on road, trying to turn wheel. Did not use any care in passing at narrow places. Two bad cuts in limb and back hurt.

Report of Dr. Strickland, Omaha, Nebraska, of Injuries.

Mr. Hornstein - Injuries largely due to jumping. No external marks of any kind. Pains on groins; after put to bed pains in back. Kidneys effected slightly.

Regarding the accident, quite a steep grade, possibly 10 foot. Mother and daughter in front seat with the driver were pinned under the back of front seat. Injuries slight, more shock and excitement. Mother - two lacerations and pain in back.

Mrs. Chas. M. Power, 4805 Davenport, Omaha, Neb. - 58 years old; two lacerated wounds on right leg over tibia and fibula. Muscles lacerated and punctured on right side. Sprained back; contusion of left side, and over scalp.

Florence Power, 4805 Davenport, Omaha, Nebraska - 33 years old; lacerated wounds on left leg; contusion of back and arms; slight laceration of left leg above ankle; sutures woven.

Annette Hornstein - Abrasion over left eye.

Leon Hornstein, 5636 Kenwood, Chicago, Illinois - Pains in the back and left groin; blood pressure systolic 100; diastolic 90; pulse irregular, thready. No external evidence of injury.

An investigation of conditions connected with this accident point to more or less carelessness on the part of the driver, who was discharged.

At 10:00 P.M., on the night of July 3, 1921, Mrs. H. Cendagorta, 200 - 25th Street, Ogden, Utah, fell in the largest pool on the crater of Old Faithful. She was badly scalded on the arms, legs, abdomen, and breast. Most of the burns were of the third degree.

According to the report of Dr. M. Isnardi, 166 Gray Street, San Francisco, she must have become confused in the dark and walked into the pool, thinking it was the way down from the crater. Dr. Isnardi jumped into the water and pulled the woman out. Afterward she became hysterical and fell in again. Dr. Isnardi again jumped into the water and rescued her the second time. The doctor's feet were burned slightly.

Mrs. Cendagorta was taken out of the park on the afternoon of the 5th, via Yellowstone.

No one can be held responsible for the accident, as it was due to her own carelessness.

Mr. B. Fry, of Breckenridge, Texas, driving a Ford Roadster from Sylvan Pass to the Lake, on July 13th, became confused while in the Pass and drove too near the edge of the road, consequently his car rolled approximately 150 feet to the bottom of the Pass. Mrs. Fry suffered a dislocated shoulder and minor contusions; a child received numerous abrasions about the head and shoulders, while Mr. Fry was not injured. The occupants of the car were taken to Pahaska Teepee in a passing machine.

The occupants of a Ford Car, from Iowa (a man and his wife), drove over the edge of the road eight miles out of Tower Falls on the Canyon-Tower Falls road on July 15th. The car rolled approximately 40 feet, where it was demolished, but neither of the occupants were injured by the fall.

Mr. Dave Hicks, of Portland, Oregon, over-turned $1\frac{1}{2}$ miles west of the Thumb Ranger Station, on the Old Faithful-Thumb road, on July 28th, sliding his car 150 feet to the bottom of the Canyon. He suffered three broken ribs, numerous lacerations and abrasions, and internal injuries, in the fall. His wife, Mrs. Stella Hicks, suffered from a dislocated shoulder, while three other occupants of the car escaped injury. Mr. Hicks could not account for the cause of the accident.

Mr. Thomas T. McCay, of Hiawatha, Kansas, with his fourteen year old son, driving from Lake to Canyon, on July 31st, over-turned his Ford car in the Yellowstone River at a point four miles north of the Lake Junction. Mr. McCay and his son were rescued from the river by Mr. H.B. Blair, of Livingston, Montana. Mr. McCay suffered a slight concussion of the brain, while his son escaped injury. Neither of the occupants were able to account for the accident.

On July 28th, about 10:00 o'clock A.M., Norman E. Robinson, a 2-horse teamster, working in crew at Canyon constructing stone guard rails between Chittenden Bridge and the Ranger Station, was thrown off from his wagon by a severe jolt of the wagon as he was driving over rough ground entering the rock quarry. He landed on his right arm, breaking one of the bones of the forearm. Dr. Crawbuck

was called and placed the arm in a plaster cast, and the man was brought in where the doctor could look after him. This case was reported to the United States Employees' Compensation Commission in the usual way.

Deaths.

Mr. Walker Green, of Peterboro, Ontario, Canada, died of heart failure at Canyon Camp, at 8:15 A.M., July 6th, after an illness of a day or two. He was attended by Doctor Windsor, of Livingston, Montana, who happened to be at the Canyon. Mr. Green was making the park trip with his wife.

Miss Emma B. Childers, of 1500 Broad Street, Wichita Falls, Texas, was instantly killed in an automobile accident on the Cody road on July 15th, as reported in a preceding paragraph.

Mrs. Mary Jacoby, of 518 James Street, West Hoboken, New Jersey, died at Canyon Hotel, on July 24th, of Apoplexy. She was traveling with her husband, who made arrangements for care of her body with Undertaker G. Walter Selby, of Livingston, Montana.

Sickness and Medical Attention.

Medical attention was furnished to park employees, under usual conditions, by Doctor W.E. Crawbuck, who reports that he made 83 calls during July.

Dr. Crawbuck was appointed an Acting Assistant Surgeon, United States Public Health Service, effective July 1, 1921. In addition to his duties under contract with park employees, and assisting the Sanitary Engineer who represents the Public Health Service in the Park, Doctor Crawbuck has quite an extensive practice among travelers who are touring the park. Dr. B.C. Brooke, of Helena, Montana, who has charge of the medical and hospital facilities of the Yellowstone Park Hotel Company, also practises medicine among tourists in the park who are in need of his services. With the heavy travel of the past month, both of these doctors found plenty to do.

Charles J. Rhoads, D.D.S., of Cody, Wyoming, arrived at Park Headquarters on July 7th and has since been engaged in the practice of dentistry here. He is well recommended by the citizens of Cody, and his services are much in demand among employees and in emergency cases that arise among travelers.

Three additional cases of mumps developed among residents at park headquarters during July, but all have recovered.

The three men who were held in quarantine for smallpox, on the old target range near Gardiner, were released and their quarters thoroughly fumigated on July 11th.

An unusual number of severe cases of tonsillitis were noted among park employees during July.

One case of pneumonia was reported at Lake Hotel on July 15th. Another case of pneumonia occurred in July, at Old Faithful Inn, which resulted in the death of the patient, Mrs. J.H. Wurdemann, of Washington, D.C., on August 1st. One case of heart failure and one case of apoplexy are reported under another heading.

Natural Phenomena.

The following changes in natural phenomena were noted during July:

At Mammoth Hot Springs there has been very little change except that Hymen Terrace is still improving. Jupiter Terrace, Angel Terrace, White Elephant, Orange Spring, and Cleopatra Terrace, have all shown great beauty and activity.

At Norris Geyser Basin: Whirligig and Mud Geysers continue their increased activity; Valentine Geyser continues to play every day or two; Constant Geyser has been seen to play a few times; Monarch Geyser is still inactive; and the New Crater and Minute-man Geysers are still playing normally.

At Lower Geyser Basin: The Fountain Geyser has been inactive, but the Great Fountain played normally.

At Upper Geyser Basin there has been practically no change since last month. Old Faithful is playing on an average of every 64 minutes; the Daisy is playing finely every 75 or 80 minutes; the Grotto, Giant, and Giantess are playing normally, but the Beehive has not played at all this year; the Grand Geyser is still giving wonderful eruptions two or three times a day; the Riverside and Lone Star Geysers are playing regularly every seven hours and three hours respectively. A noticeable quantity of broken bits of "formation" was thrown out from the crater of Old Faithful Geyser during some of its eruptions.

At West Thumb, two or three small geysers have been

quite active.

Copies of Notes on Flowers, Geology, Animals, and Birds, for August, are enclosed. These notes, which are prepared by Park Naturalist Skinner, are posted on bulletin boards in hotels, camps, stores, and other places in the park where they are seen by tourists, and they are also distributed from our Information Office to those who are specially interested.

Special Visitors.

Honorable E.C. Finney, First Assistant Secretary of the Interior, who with his wife and two daughters entered the park on June 29th, made the regular trip around the park. July 5th and 6th they spent at Tower Falls, making fishing trips from there. The 7th they visited Soda Butte, Cooke City, and the Buffalo Ranch, where the main herd was driven down for their inspection. They returned to Mammoth the same afternoon, and the following day made an inspection of the shops and premises connected with our headquarters, and that of most of the park concessioners. They left the park on the 9th, via Cody, Wyoming, and that evening the Cody Club gave the Secretary and his party a fine dinner.

Mr. Desmond Fitzgerald, Hydraulic Engineer, Past President, American Society of Civil Engineers, of Boston, Mass., arrived July 7th, and on July 8th, Mr. Harlan P. Kelsey, President, Appalachian Mountain Club, Mr. Frederick Law Olmstead, President, American Society of Landscape Engineers, and Mr. Herbert Gleason, a prominent lecturer and photographer, also of Boston, arrived in the Park. Mr. Fitzgerald spent July 8th to 13th, at his own expense, studying the shore line of Yellowstone Lake.

The party visited Jackson Hole on July 14th, and returned to Snake River Station, at the south entrance, on the following day, and entered the Bechler River country, in the southwest corner of the park, with saddle and pack train, spending several days there. Messrs. Fitzgerald and Olmstead left via Ashton, Idaho, on July 22nd, Mr. Kelsey and Mr. Gleason returning to Mammoth. Mr. Kelsey afterwards visited Grasshopper Glacier, a day's ride by trail into Beartooth National Forest from Cooke, Montana. He went to Lake Hotel on July 27th and left the park via Cody on the 28th. Mr. Gleason left via West Yellowstone on August 1st.

These prominent gentlemen were very favorably impressed with the scenic value of the Bechler River country, and expressed themselves as opposed to any policy of damming the waters of the park for irrigation or power purposes, some

of them taking occasion to register with their Congressman an earnest protest against the "Walsh Bill" (S.274 and 275), which provides for the damming of Yellowstone Lake.

On July 15th, Colonel C.H. Birdseye, Chief Topographic Engineer of the United States Geological Survey, arrived in the park with his assistant, Mr. Glenn R. Smith, for the purpose of surveying the Falls River section, in the southwest corner of the park, with a view to making corrections in the official map. They did some work at Upper Geyser Basin, and on July 28th left with saddle and pack outfit, furnished by this office, for the southwest corner, via the Upper Firehole River.

*Cook & gg
Mra
+ JH
30-31
Jackson
39*

On July 22nd, Mr. Wm. C. Gregg, of Hackensack, New Jersey, arrived in the park, hired a pack train, and on July 28th joined Colonel Birdseye and party for the trip into the southwest corner. Mr. J.E. Haynes, the official park photographer, also joined them with a view to securing a collection of photographs of some of the beautiful waterfalls and other scenery in this section, which has been practically unknown hitherto until Mr. Gregg explored and wrote it up last year. This party is still in the field.

On July 21st, Mr. H.M. Bell, Vice President and General Counsel of the Rock Island Railway Lines, with his family, entered at the northern gateway.

Mr. C.E. Graham, Vice President of the Chesapeake and Ohio Railroad, entered via Gardiner on July 29th.

Mr. E.J. Engel, Vice President in charge of non-railroad properties of the Atchison, Topeka, & Santa Fe Railroad, entered on July 28th.

Mr. Dan S. Spencer and Mr. W.S. Basinger, of the Union Pacific Lines, visited the park on July 17th, and Mr. Spencer came in again on July 25th.

Mr. E.F. Deigert, Asst. General Passenger Agent, Union Pacific Railroad Company, entered July 1st and left on the 10th, via West Yellowstone.

Mr. E.E. Nelson, Assistant General Passenger Agent, Northern Pacific Railway Company, entered at Gardiner on July 20th and left via the same route on July 23rd.

Mr. L.P. Gilliman, Traveling Passenger Agent of the Northern Pacific Railway Company, visited the park via the northern entrance on July 13th.

Mr. Emerson Hough arrived in the park on July 25th and is still here.

Dr. C.C. Adams, Director of the Roosevelt Wild Life Forest Experiment Station, Syracuse, University, arrived on July 29th and is still in the park.

Mr. George Bird Grinnell, and wife, of New York, who entered the park on June 30th, left about the middle of July enroute to the Eaton Ranch, in Wyoming.

Hon. Chester I. Long, Ex United States Senator from Wichita, Kansas, entered the park, with his family, on July 18th, via West Yellowstone, and left via Gardiner on July 25th en route to Glacier Park.

Mrs. A.P. Davis, wife of the Director of the United States Reclamation Service, arrived on July 18th and is spending several weeks in the park awaiting the arrival of some friends later.

Mr. Herbert Fleischhacker, President of the Anglo-London-Paris National Bank, visited the park July 5th to 8th, entering and leaving via West Yellowstone.

Major Roger Toll, formerly Superintendent of Mount Rainier National Park, with his wife, mother, and two friends, entered the Cody gateway the morning of July 10th. They were at headquarters on the 14th and left via Jackson Lake and the Wind River route about the 17th. Major Toll visited Shoshone Cavern National Monument on his way to the park and will write a special report on his inspection of the cave.

Mr. John B. Trevor and family, of New York, who entered on June 23rd, are still camping and traveling with pack outfit on trails in the park.

Mr. Edward F. Bond, of Greenburg & Bond Company, Atlanta, Ga., and party, entered the park on July 24th and left on the 26th.

Mr. Benjamin Marks, of New York, Treasurer of the Far Western Travelers' Association, entered via Cody July 18th and left via Gardiner on July 21st.

Mr. J.P. O'Brien, General Manager, O.W.R. & N. Company, and family, entered at West Yellowstone on July 29th for a 4½ days' trip.

Doctor Warren, an authority on beaver, visited the park, spending considerable time at Camp Roosevelt.

Dr. George W. Middleton, of Salt Lake City,

entered via West Yellowstone on the 19th and left on the 24th.

Mr. R.A. Thorley, of Cedar City, Utah, came in via West Yellowstone on July 20th and left via Jackson Hole on the 25th.

Mr. Fred E. Buck, State Irrigation Engineer, of Montana, came in via West Yellowstone on July 25th and left via Gardiner on the 28th.

Mr. C.J. Millis, Assistant to President, Southern Pacific Railroad Company, entered and left via West Yellowstone.

Colonel Robert E. Wiley, of the General Staff of the Army, was here July 14th to 20th, entering and leaving via Gardiner. He was en route to his new station in the Hawaiian Islands.

State Game Warden W.T. Judkins, of Wyoming, passed through the park, entering from the south, on July 15th.

Mr. R.P. Haas, Chief Clerk of the Shoshone Indian Reservation, Fort Washakie, Wyoming, entered the park via the eastern gateway on July 19th and left via the Jackson Hole on the 23rd.

Chief Highway Engineer F.E. Bonner, of the United States Forest Service, visited Yellowstone Park Saturday and Sunday, July 30th and 31st. He came through the park as part of an inspection tour which took him over all the roads in the forests lying west of the park, and while here I conferred with him in regard to the improvement of the road leading from Livingston to Gardiner.

Among the visitors from Switzerland were: Mr. Carlos V. Tschudi, of St. Gallen. Mr. Tschudi is a newspaper man and expects to write several articles on his observations of America; upon his return to Europe. Messrs. Walter Bloch and J.G. Streckenberg, of Bale, Switzerland, left the park on August 2nd, after spending two weeks here. They traveled over all the roads of the park in their own automobile, and also spent several days on horseback trips, riding into remote sections with the rangers.

A Boy Scouts party from Clinton, Iowa, entered via Cody, on July 11th, and went out the same way on July 15th. This party contained a total of 272 men and boys, of whom 190 were Boy Scouts. They were traveling in 53 automobiles, with five trucks for hauling baggage.

Among the official visitors to the park were:

Mr. George E. Goodwin, Chief Civil Engineer, National Park Service, who was here to discuss the annual estimates, July 24th to 28th; also Mr. Noble Wilt, Accountant from the Washington office of the National Park Service, July 24th to August 1st.

Other visitors to the park during July included:

Mr. Robert J. Jessup, a reporter on the Deseret Evening News, of Salt Lake City, July 12th to 16th.

Vice President Bowen C. Lingle, of the Harris Trust and Savings Bank, of Chicago, Illinois. ✓

Mr. Arthur Bevan, Assistant Geologist, Montana State Bureau of Mines, Butte, Montana, July 18th to 21st.

Mr. A.K. Fiedler, of the United States Geological Survey.

Mr. F.P. Galtes, Professor of Chemistry and Geology, Gonzaga University, Spokane, Washington.

Professor Browne, of Cambridge, Mass., July 5th to 8th.

Mr. Fred Coffey, of the Union Pacific Railroad, July 4th to 10th, securing special feature pictures for publicity purposes.

Mr. Jack A. Bristol, representative of the Associated Press, July 4th to 8th.

Motion Pictures.

Motion Picture Permit No. 3 was issued to Mr. L.M. Lewis, of 1208 East 63rd Street, Chicago, Illinois, on July 24th, and Mr. Lewis has since been engaged in taking motion pictures of a general nature in the park.

Mr. Ashton Dearholt, Production Manager, Ben Wilson Productions, of Los Angeles, California, arrived on July 19th to make arrangements to take motion pictures in the park. Director Duke Worne arrived on August 1st, and the troupe which is to operate in the park arrived at the western entrance on August 2nd. This company expects to operate for about thirty days in the park, as suggested in our recent correspondence, and a park ranger has been detailed, to assist them, at their expense.

Miscellaneous.

Entertainments: No general entertainments were

furnished except those staged by camps and hotels for the benefit of their guests, and twice a week dances held by the Park Curio Shop, at the Post Exchange hall, at Mammoth, for the benefit of park employees.

Religious Services: Church services were held in the chapel, at headquarters, as follows:

- July 3rd - Morning and evening services by Rt. Rev. Wm. F. Faber, Episcopal Bishop of Montana.
- " 10th - Morning services by Rev. J.F. Pritchard, Episcopal Minister of Emigrant, Montana.
- " 10th - Evening services by Rev. J.H. Groth, English Lutheran Minister of Livingston, Montana.
- " 17th - 5:30 A.M., by Rev. Joseph P. Kroha, Catholic Minister of St. Francis, Wisconsin.
- " 17th - Morning services by Rev. J.F. Pritchard.
- " 17th - Evening services by Rev. J.H. Groth.
- " 24th - Morning services by Rev. J.F. Pritchard.
- " 24th - Evening services by Rev. Frank A. Butler, Baptist Minister from Livingston, Montana.
- " 31st - Mass at 8:30 A.M., by Rev. M.J. Webber, of Glendive, Montana.
- " 16th - Mass at 6:00 A.M., by Rev. F.A. Fox, of St. Vincent's Parish, 65th and Lexington Avenues, New York City.

Catholic services were also conducted at the Canyon Hotel, at 6:00 A.M., July 3rd, by Rev. Joseph P. Monville, Pastor of Holy Spirits Church, of Sharon Hill, Pa.

published & discontinued of month

Publications: The "Tourist Tattler" continues to be published every once in a while, and is proving to be a fairly successful business venture for its youthful editors. It is sold from about every newstand and place of business in the park and vicinity. Copies of numbers 3, 4, 5, 6, and 7 are enclosed.

Copies of Circular No. 17, July 30th, issued from this office, are enclosed. There are also enclosed copies of table issued July 15th showing comparative travel figures July 1st to 15th for 1920 and 1921; and table showing number of automobiles entering the park from different states during June and July, with number of passengers carried by them, tabulated by entrances.

X. RECEIPTS AND REMITTANCES:

The regular monthly report of revenues due, collected, and transmitted during the month of July, is enclosed. The total amount of money enclosed, as shown by this report, is described as follows:

Postal Money Order, No. 47050, dated July 22, 1921, drawn by the Postmaster at Yellowstone Park, Wyoming, on the Postmaster at Washington, D.C., to your order,	\$ 6.94
Check No. 1072, dated July 13, 1921, drawn to your order by the Yellowstone Park Transportation Company, on the National Bank of Montana, Helena, Montana,	247.20
Check No. 585, dated July 12, 1921, drawn to your order by the Yellowstone Park Hotel Company, on the National Bank of Montana, Helena, Montana,	172.08
Check No. 141, dated July 6, 1921, drawn to your order by J.E. Haynes, on Yegen Bros., Gardiner, Montana,	3.60
Check No. 174, dated July 6, 1921, drawn to your order by J.E. Haynes, on Yegen Bros., Gardiner, Montana,	8.55
Check No. 998, dated July 13, 1921, drawn to your order by the Yellowstone Park Camps Company, on the Northwestern National Bank, of Livingston, Montana,	87.44
Draft No. 115, dated July 6, 1921, through Yegen Bros., on the National Bank of the Republic, Chicago, drawn to your order by Mesdames Pryor & Trischman,	18.00
Postal Money Order, No. 46918, dated July 16, 1921, drawn by the Postmaster at Yellowstone Park, Wyoming, on the Postmaster at Washington, D.C., to your order, ..	5.70
Postal Money Order, No. 46688, dated July 2, 1921, drawn to your order by the Postmaster at Yellowstone Park, Wyo., on the Postmaster at Washington, D.C.,	<u>30.00</u>
Total,	579.51

Acknowledgment of receipt of the enclosed money is requested.

Cordially yours,

Horace M. Albright,
Superintendent.

The Director,
National Park Service,
Department of the Interior,
Washington, D.C.

Enclosures.

CAL:CH

DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
YELLOWSTONE NATIONAL PARK
YELLOWSTONE PARK, WYOMING

AUGUST NOTES ON THE FLOWERS

During early August, summer is at its height on the Park plateau and on the high mountains. But before the end of the month heavy frosts are apt to occur and autumn begins on the high peaks and gradually creeps down to the heights to the Park plateau, where most of the tourist routes lie. While the fields of blossoms on Mt. Shoshone and our other peaks are now wonderful to behold, they have not the resisting capabilities of our earlier years and the frosts and droughts soon cut them down.

Geraniums, Asters, Rocky Mountain Bee Plants, Sunflowers, Wild Roses and some Lupines are still in bloom below 7000 feet altitude. Here and there, Cedar berries and Choke Cherries are ripening. So also, are the wild Red Raspberries and the Service Berries, but our friends of the bird and bear species do not leave us many berries for taste.

On the Park plateau between 7000 to 8000 feet levels, Indian Paint Brush, Wild Flax, Umbrella Plants, Yarrow, Angled Gentians, Harebells, and Lupines are at their best and are the flowers chiefly responsible for the great masses of color marking our meadows and forests. A few of our earlier flowers still persist but most of them have given way to the mid-summer varieties. Yellow Columbines and Lungwort are still blooming in the damper forest places; but the Little Elephants, so common last month on our meadows, are disappearing owing to the drying up of the meadows. Monkshood, Goldenrod, and Fireweed are just coming into bloom. Strawberries, Gooseberries, Raspberries, and Service Berries are ripening everywhere. The higher pine forests are matted beneath with masses of low Huckleberry shrubs and the tiny red berries are ripening. Altho different from the Eastern Huckleberry in size and color, they have the same taste and other properties. In other parts of the forests, Wintergreen and Kincki-kinick berries are reddening, especially toward the end of the month.

It is the high mountains that carry our glorious flower gardens in August. The hills of the lowest elevations are turning brown, but the highest mountain meadows are a glorious mosaic of color. Brilliant, scarlet Paintbrush, White Phlox, deep blue Forget-me-nots, Buttercups, Purple Asters, and the ever present Lupines form pictures of great beauty. There are brilliant yellow masses of Umbrella Plants near the roads, especially near the northern crossing of the Continental Divide. But towards the end of August the first frosts will begin to blight the blossoms, and to color the leaves of Baneberry, Mountain Ash, Willow and the higher Aspens.

AUGUST NOTES ON GEOLOGY

At Mammoth, JUPITER TERRACE is still increasing in size and beauty until now it is probably finer and more wonderful than it has ever been. ANGEL TERRACE has wonderful coloring and is active at four different points. The WHITE ELEPHANT has become so highly colored from the deposits since last year that the term "White" is now a misnomer; this activity still continues. At the ORANGE SPRING, the small cone to the east of the main mound is showing continued growth. MOUND TERRACE is very beautiful and so is CLEOPATRA TERRACE. NERVA TERRACE is inactive but HYMEN TERRACE is improving again.

At Norris Geyser Basin, the CONSTANT geyser is inactive and its activity transferred to the WHIRLIGIG geyser directly across the plank walk. The WHIRLIGIG is playing steadily and some of its spurts reach the height of thirty feet and the geyser is evidently becoming more powerful. The BATHTUB is boiling steadily its somewhat "soapy" water, but is not an active geyser this year. The MUD BOILER plays every 6 to 10 minutes, averaging about 8 minutes between eruptions. The NEW CRATER geyser is playing for about fifteen seconds every minute, but only about one out of four eruptions reaches full height. The MINUTE MAN geyser is playing about thirty seconds out of each minute. There are no indications that the MONARCH has played at all this year, or that it will resume activity soon. The VALENTINE has resumed activity after a two year rest, and is now playing every one or two days.

The FOUNTAIN geyser has been inactive, but the GREAT FOUNTAIN geyser is playing with its usual strength and activity every 8 to 10 hours.

In the Upper Geyser Basin, the intervals of OLD FAITHFUL are from 60 to 70 minutes, some eruptions are delayed and a few occur sooner than this interval. The DAISY is playing quite regularly at 70 to 80 minutes, and is greater in power than ever before. The GROTTO continues to play at frequent intervals, but there is no regularity as to period between eruptions nor as to the duration of the eruption. The GIANT is giving fine eruptions at intervals of every 8 to 12 days. The GIANTESS is playing on long periods of two weeks and over. The BEEHIVE has not been active at all this year. The GRAND still continues its wonderful activity, playing quite regularly every 8 to 10 hours. The CASTLE has begun to play more frequently again; but the spurts thrown out ten to thirty feet high at short intervals are not an indication of an early eruption. The RIVERSIDE is still showing great regularity of seven hours between eruptions. The LONE STAR Geyser is giving fine displays every 3 hours, with a long series of preliminary eruptions extending over an hour and a half before each main eruption.

AUGUST NOTES ON THE ANIMALS

The show herd of 19 fine BUFFALO are on view at the Corrals near Mammoth. So far, 60 calves have made their appearance in the tame herd this year. The wild herd, too, seems to be increasing. MOUNTAIN SHEEP are on the high mountains, but occasionally seen on Mt. Washburn. Young lambs are now two months old.

ANTELOPE are seen occasionally along the road from Tower Falls to Mammoth. The little kids are now three months old.

ELK are on the high mountains to get away from the flies. Not apt to be seen along the tourist routes but short trips into the forest glades or up the mountains should disclose a few. The horns will be full grown about the middle of the month but still covered with skin. The calves are two months old, and still spotted with round, white spots.

DEER might be seen in ones and twos at almost any point throughout the trip. Horns are full grown but still covered with skin. The fawns are three months old and still spotted with white.

BEAVER are shy but might be seen at almost any point in the evening, but not in daytime. On Glen Creek beside the Buffalo Corral, in Willow Park, along the Gibbon and Firehole Rivers, near the Yellowstone River bridge above Tower Falls, and beside the road from T. J. 12 miles from that junction and 6 miles from Mammoth, are the most likely places. Most of the beaver have left their houses and dams to lead a more or less wandering life until autumn.

COYOTES are common enough and often seen, but wolves and mountain lions are too rare to accommodate the tourists.

BLACK, BROWN and CINNAMON BEARS are all the same species, just as we have black, white, and yellow bears. They are to be seen about the dumps near Old Faithful, Lake, Canyon, and Mammoth, and in addition might be seen at almost any point along the roads and trails. The cubs are now about six months old, having been born a month or more before the parents left their places of hibernation. No matter how friendly they seem, all bears are subject to dangerous fits without warning. **LEAVE 'EM ALONE!**

RIZZLIES are comparatively rare but might be seen about the dumps near Lake and Canyon after sunset and sometimes before sunrise. Not apt to be seen in daytime.

AUGUST NOTES ON THE BIRDS

August is a very unsatisfactory month to study our birds. The season of song and bright plumage is over; most of the young birds have been cared for and are out of the nest; the old birds are moulting and consequently most are drab; and finally it is so warm that the bulk of the birds remain all day in cool, shady retreats.

Spring migration has begun with the arrival of the first willet. Soon the other shore birds and waders will come north from their northern homes, and the swallows will leave us during the last week of the month.

The presence of young birds will prove very confusing in the effort to identify our birds. Most of the young birds have left the nest and only a few of the warblers, the swallows, the night-hawks, and mountaineers of the robin, chickadee and junco species are still nesting. At the osprey nest on Eagle Nest Rock the young are almost grown. In the Grand Canyon of the Yellowstone there are two nests easily seen below Inspiration Point, each with two younglings hatched out in early July; and a nest below Grand View where the young osprey were hatched about July 1st. Besides these, there are about twenty other nests of osprey in the Canyon between the Upper Falls and Inspiration Point but mostly well hidden and not so easily found. There is another nest on a tree beside the East Entrance road about five miles from Lake Junction. During early August the ospreys will be seen on the nests holding their young with half-raised wings from the fierce rays of the hot sun.

It has been a favorable year for the broods of geese and ducks. Large numbers of Canada geese are on Grebe Lake and at the south end of the Yellowstone Lake. Mallards and blue wing teal are in numbers on the marshes south of Yellowstone Lake. White pelicans and gulls are nesting on Molly Island and this month the young pelicans and gulls begin to leave their nests.

Approved:

HORACE M. ALBRIGHT,
SUPERINTENDENT.

M. P. SKINNER,
PARK NATURALIST.

PAID AND COMPLIMENTARY CARS AND PASSENGERS BY STATES.

JUNE AND JULY, 1921.

T A T E	NORTH		EAST		WEST		SOUTH		TOTAL	
	Cars:	Passe:	Cars:	Passe:	Cars:	Passe:	Cars:	Passe:	Cars	Pass-
	:	ngers:	:	ngers:	:	ngers:	:	ngers:	:	ngers
Alabama	:	:	:	:	:	:	:	:	:	:
Arkansas	:	:	18	65	2	9	:	:	20	74
Arizona	6	22	3	12	20	65	2	5	31	104
Colorado	32	106	187	614	62	203	22	85	303	1008
California	234	731	62	179	374	1141	22	51	692	2102
Connecticut	1	2	3	12	3	12	:	:	7	26
Delaware	2	5	:	:	:	:	:	:	2	5
Florida	15	47	9	28	2	8	:	:	26	83
Georgia	2	6	2	6	:	:	:	:	4	12
Illinois	105	329	135	443	16	56	1	4	257	832
Indiana	31	107	58	192	13	43	2	6	104	348
Iowa	85	286	196	782	23	74	4	19	508	1161
Kansas	44	160	9	34	538	2128	103	405	694	2727
Kentucky	18	66	137	497	38	124	3	8	196	695
Louisiana	:	:	7	27	2	6	:	:	9	33
Maine	2	8	4	18	2	8	:	:	8	34
Maryland	931	3280	189	675	331	1205	4	14	1455	5174
Massachusetts	3	9	5	11	:	:	:	:	8	20
Michigan	7	19	12	44	:	:	:	:	19	63
Minnesota	:	:	:	:	:	:	:	:	:	:
Mississippi	42	140	68	227	12	36	:	:	123	403
Missouri	1	3	:	:	:	:	:	:	1	3
Montana	19	62	112	365	22	69	7	24	160	537
Nebraska	108	402	46	155	5	12	:	:	159	569
New York	27	92	59	189	10	31	1	3	97	315
New Mexico	2	9	4	15	4	12	:	:	10	36
New Jersey	6	23	14	46	2	9	1	6	23	84
New Hampshire	:	:	3	5	:	:	:	:	3	5
Nevada	1	2	2	9	12	36	1	4	16	51
Nebraska	31	100	189	657	28	95	6	21	254	873
North Carolina	1	5	:	:	2	8	:	:	3	13
North Dakota	117	406	45	164	6	19	:	:	168	589
Oklahoma	21	81	80	266	14	42	5	18	120	407
Oregon	56	189	78	270	12	36	:	:	146	495
Pennsylvania	92	338	10	29	90	306	10	26	202	699
Rhode Island	13	44	33	111	8	26	1	3	55	184
South Carolina	2	6	2	5	:	:	:	:	4	11
South Dakota	2	6	:	:	:	:	:	:	2	6
Texas	77	249	45	140	7	24	:	:	129	413
Tennessee	13	50	116	372	23	72	8	28	160	522
Vermont	:	:	3	10	3	16	:	:	6	26
Virginia	6	17	6	14	417	1630	71	246	500	1907
Washington	3	7	3	12	1	3	:	:	7	22
West Virginia	:	:	1	2	:	:	:	:	1	2
Wisconsin	303	1018	30	121	162	537	10	31	505	1707
Wyoming	95	314	47	174	5	20	1	2	148	510
District of Columbia	44	142	486	1694	29	97	56	184	615	2117
Hawaii	1	6	3	9	2	7	1	2	7	24
Canada	:	:	:	:	1	2	:	:	1	2
Mexico	33	117	4	13	5	22	:	:	42	152
	:	:	:	:	:	:	:	:	:	:

TOTAL -----	2634	9011	2525	8733	2308	8249	342	1192
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7809 27185

August 31st, 1921.

Brief Outline of Work accomplished during the month of

July by the Plumbing Division.

1. Toilet ~~at~~ ^{at} ~~Star Geyser~~
2. " ^{at} ~~Public Camp~~ ^{at} ~~Cannon~~

Installing complete water system
at Lake Public Auto Camp #1.

Building of Cement Discharge
and connecting 4,000 ft of
1 1/2" G. I. Pipe ^{with 1/2" pipe}. Eight faucets
were installed in camp
and four new toilets (dry earth)

A Mammoth ~~new~~ ^{new}
Lawn Sprinkler system were
connected onto present water
system and general repairs
to sewer & water system

Extension of Pub Auto Camp by cutting out brush
& cleaning road, & 2 new toilets

Proposed:

Extension Mammoth Auto Camp to

provide adult fuel.

Adult Camp to be known as No 2 at
Lake Outlet near fishing bridge. including

ingr. nat. ^{12,000 ft.} & cleaning out brush & few toilets

Fill out briefly and return to Mr. Lindsley before the
5th of the following month. Data needed for monthly report.

Allen

8/5, 1921.

Brief Outline of Work accomplished during the month of
July by the Electrical Division.

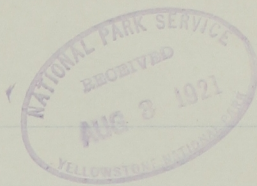
Two small crews have been working on Tel lines during July one between Lake Junction and Pahaska, having completed 9 miles and one between Thumb Station and Snake River Reservoir and putting in new poles where necessary having completed 10 miles.

E. Allen

Fill out briefly and return to Mr. Lindsley before the 5th of the following month. Data needed for monthly report.

Report for July 1921.

Lectures at hotel -----	27
Lectures at camp -----	26
Lectures at auto camp -----	25
Total-----	78



On July 2nd it snowed hard and therefore there was no possibility of giving the auto-camp talk, though I went down there ready to give it, if the Ranger had been able to get an audience. I found that he had received orders not to build the fire.

On July 9th I went to Livingston and Mr. Skinner gave my talks.

On July 10, it rained hard and therefore there was no auto camp talk.

On July 12 I was relieved from talking to listen to Mr. Skinner, but Mr. Delmar was sick that night and so I stayed with him.

On July 14 I listened to Mr. Skinner.

On July 24 I climbed Sepulchre. My heart troubled me and so, though I did my best I could not get down in time for the talks. I sent Ben ahead so that Mr. Skinner could be asked to take them.

On July 31 I was eight minutes late reaching camp because a Mr. Atherton of Honolulu caught me when I ran back for my coat at the hotel, said that he had a letter from Mr. Mather and asked for information. They had started their musical program at camp and refused to stop it for my talk, saying that I could talk afterward. Of course I could not because I had to go to the Auto Camp. The manager was away. I reported the matter to her the next day.

When I reached the auto camp that same night there was no bon-fire, because when Mr. Bishop gave his orders for the evening it was raining very hard, hence when it was time for my talk, though the rain had stopped there had been no announcement made of the talk and hence there was no audience.

Respectfully submitted August 2nd 1921,

Mary A. Rolfe

Estimates

Last week, Chief Civil Engineer George E. Goodwin, National Park Service, visited Yellowstone National Park and spent two days conferring with Superintendent Albright on matter relating to the budget of the National Park Service for the fiscal year ending June 30, 1923. Mr. Albright, who is field assistant to the Director of National Parks, as well as Superintendent to the Yellowstone, is intrusted each year with the work of preparing the tentative budget for the National Park Service.

All matters relating to new construction work are referred to Mr. Goodwin for report and recommendation for consideration in preparing the budget.

National Park officials, like all other government officers, are working this year under instructions laid down by the Director of the Budget, General Dawes. Greatest economy and utmost efficiency are brief expressions of General Dawes' policy and it is understood that only the most essential improvements in National Parks will be approved by the Director of the Budget.

Next week, the Chief Clerk, B. L. Vipond, of the National Park Service will arrive from Washington to assist in putting the estimates in final form for submission to the higher budget officers of the government.

Railroad Vice Presidents

Last week was railroad vice presidents week in the Yellowstone. Among others, the following high executive officers of some of our most important railroads visited the Park.

E. J. Engel, Vice President in charge of non-railroad properties of the Aitchison-Topeka and Santa Fe, entered the Park on July 28th.

C. E. Graham, Vice President of the Chesapeake and Ohio, entered via Gardiner Gateway on July 29th.

And on July 21st, Mr. M. M. Bell, Vice President and General Counsel of the Rock Island lines, with his family, entered the Northern gate.

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

YELLOWSTONE NATIONAL PARK

YELLOWSTONE PARK, WYO.

OF THE SUPERINTENDENT

Superintendent Horace M. Albright,
Yellowstone National Park,
Yellowstone Park, Wyoming.

Dear Mr. Albright:

The following is my monthly report to you on the activity of the Ranger Service of Yellowstone National Park. This report includes the general conditions of all activities connected with this department, changes in the personnel, work completed, work begun, work in progress, arrests, reprimands, wild animal conditions, accidents, travel statistics and other matters of general interest.

My report to you is as follows:

I. GENERAL CONDITIONS:

(a) Road and Weather Conditions

Weather conditions the beginning of the month held up the regular motor travel to a noticeable extent. Three and eighty-tenths inches of snow on July 2nd was responsible for a loss of practically five hundred visitors to the Park. During this period travel was suspended over Mount Washburn.

Work on the Gallatin County road has been in operation under the direction of the Gallatin County Highway Commission. Two hundred and eighty-six automobiles traveled over this road entering and leaving the Park through the West Yellowstone Checking Station according to the report of Park Ranger C. O. Davis.

(b) Travel

Figures on travel records for the month of July of this

year proved to be beyond expectations, 32,519 tourists having entered in all entrances via the Yellowstone Park Transportation Company and the private motorists, and 6,378 automobiles and motorcycles. These tourists are divided as follows:

JULY 1 to JULY 31

1 9 2 1							
	R A I L		M O T O R			TOTAL	TOTAL
Entrance :	Hotels :	Camps :	Cars :	Pass :	Misc :	Month :	Season
North :	1485	1455	1987	6963	124	10,027	14,157
West :	3198	1981	1894	6880	66	12,125	15,708
East :	671	876	2128	7414	107	9,068	10,949
South :			369	1277	22	1,299	1,381
Total :	5354	4312	6378	22534	319	32,519	42,195

The largest day's travel during the month was July 20th, when 1477 tourists were registered at the entrances, hotels and camps. July 20th, 1920, was also the largest day for the month the past year, with 1383 tourists registered.

Financial conditions throughout the United States have been responsible for loss during the month of July of 1453 railroad tourists.

Through the loss of the requisition for the 1921 automobile permits it was necessary to mimeograph copies of these permits to control the regulations of tourists entering the Park in and on vehicles. These permits were first used July 10th and have been in effect through the entire month.

II. PERSONNEL:

Notification was received on July second from Park Ranger Ford Purdy that he expected to leave the Service August first to enter business on his own initiative. His resignation has been received and it has been recommended that it be approved.

Park Rangers William Henry Harrison, W.A.E., and Mr. Eugene Cohn, of San Francisco, were employed by this Department July

first on a temporary basis. C. M. Jennings and Mr. Norman Hibbard were employed by this Department July twenty-third and twenty-fourth respectively, as laborers performing the duties of temporary park rangers. This addition was made necessary through the expected vacancy of Park Ranger Purdy and by the relief from station of Temporary Park Ranger Kenneth W. Krippone, who was found incompetent for the position he held at the Gallatin Ranger Station. Mr. Hibbard was assigned to this vacancy and his services have proven entirely satisfactory.

The services of G. Shelby Ferguson, Temporary Park Ranger at West Yellowstone Checking Station were not satisfactory.. Consequently, he was relieved from duty at the station by Temporary Park Ranger Belmap C. Hawkes of the Madison Junction Station and has rendered excellent services during the time he has been in charge of that station.

Park Ranger Clifford Anderson was relieved of duty at the Lake Station upon my order of July seventeenth after complaints had been received of his insubordination. He was assigned to duty at the Riverside Ranger Station to relieve Park Ranger Ford Purdy. His vacancy at the Lake Station has been filled through the employment of Mr. Jennings.

The personnel of the Ranger Force consists of; One Chief Ranger, three Assistant Chief Rangers, twenty Park Rangers, four Park Rangers W.A.R., 37 Temporary Park Rangers and seven laborers acting as Park Rangers.

Special Assignments;

Temporary Park Ranger Eugene V. Robertson was assigned to accompany the Clinton, Iowa Boy Scouts through the Park July twelfth. Through a misunderstanding and unpleasant experience on Yellowstone Lake he was unable to carry out this assignment.

Temporary Park Ranger Pierce A. Cummings, under special detail at the Lake Hotel to investigate illicit traffic of intoxicating liquors at that point. His work while on this detail was exceptional and is worthy of your commendation.

Park Ranger Raymond G. Little and Assistant Chief Ranger Harry Trischman assigned to accompany the Olmsted party through the Bechler River district of the Park, who were investigating geological conditions in connection with the proposed irrigation of a dam in the Falls River Basin.

Leaves of Absence:

Park Ranger Hollis M. Matthew, W.A.E., was granted six days annual leave, extending from June twenty-second to June twenty-eighth, and fourteen days sick leave, extending from June twenty-ninth to July eleventh, due to injuries received in the performance of his duties as a motorcycle patrolman.

Park Ranger Emmett S. Matthew, A.W.E., was granted three days annual leave, extending from July twenty-third to July twenty-sixth, and three days sick leave, extending from July twenty-seventh to July twenty-ninth, due to a disease contracted in the feet by the contact of his feet with the heat of his engine while performing the duties of motorcycle patrol.

Temporary Park Ranger Robert J. Potter, injured while clearing trails in the Bechler River district, was not carried on the payroll of this Department between July first and July tenth. It is expected that he will apply for compensation on account of this injury.

III. WORK COMPLETED

(a) Trails

Park Ranger Henry Anderson, assigned to trail and cabin work in the Southern and Eastern districts of the Park, completed the repairs on the Cascade Creek Snowshoe Cabin and cleared the trails from Lewis Lake, at Heart Lake, from Heart Lake to Snake River Station via Basin Creek and the Snake River Trail to Fox Creek, and corduroyed all of the Bechler River trail from Snake River to Bechler River Stations. He is now building a new Snowshoe Cabin at Fox Creek.

Rangers at the Lake Station have cleaned out the Pelican and Mist Creek trail to the Coal Creek Snowshoe Cabin, the Jones Pass trail, the Upper Yellowstone trail and the Lynx Creek trail. Rangers at the Snake River Station have cleaned out the boundary trail to the Bechler River Station and the Marysville Road and trail from the Snake River Station to the Harebell Snowshoe Cabin.

Rangers at the Bechler River Station have cleaned out the West boundary trail to Buffalo Lake, which has left all of the trails used in this district in excellent condition.

Under the direction of Park Ranger Sam T. Woodring, Temporary Park Rangers at the Canyon Ranger Station have, during spare hours, repaired the trail to Inspiration Point, to the Seven-Mile Hole and to the Silver Cord.

Park Ranger Ford Purdy and Temporary Park Ranger Kaplan have cleaned the trails from the Riverside Station to the South Riverside Snowshoe Cabin, and from the Riverside Station to the Grayling Cabin Station via the old Yellowstone horse pasture and from the Riverside Station over part of the trail to Grizzly Lake via Cougar Lake.

Park Ranger C. O. Davis and Temporary Park Ranger Krippene have cleaned the trails from the Gallatin Station to Grayling Cabin to the Sportsman Lake Cabin and along the West boundary over the Bacon Rhine.

Park Ranger James N. Dupuis and Temporary Park Ranger Knight D. Schramm have cleaned the trails from Tower Falls Station to Amethyst Mountain, to Elk Ton Creek, to Hellroaring and to the North boundary line on Slough Creek, and part of the Specimen Ridge trail.

Park Ranger George Wynn and Temporary Park Ranger Carter cleaned the trails from Soda Butte Station to Coal Creek, the East boundary line of Soda Butte Creek, the North boundary line of Pebble Creek and part of the Cooke City trail.

Park Ranger Hans Larson has cleared the trail from headquarters to Sportsman Lake to Grizzly Lake and part of the trail over Sepulchre Mountain.

Charles R. Stoll, of Gardiner, Montana, completed harvesting the alfalfa hay crop on the Gardiner Meadows about July twenty-fifth. He has approximately one hundred twenty-five tons of hay in the stacks located in the hay corral. This was harvested at a cost of approximately \$575.00, and will be used during the winter to feed in emergency cases.

(b) Service to the Public

Working in co-operation with the Western Union Telegraph Company, rangers of this Department delivered twenty-eight telegrams to a like number of tourists in all sections of the Park during the month.

Under the system originated for the 1921 tourist season guide trips across the Mammoth Hot Springs Formation and the Upper

Geyser Basin were conducted three times a day at each place by Rangers assigned to this duty.

More than ^{7,577} 7000 tourists were shown the numerous geysers in the Upper Geyser Basin by the following Temporary Rangers:

Florian J. Ubel
Ray S. Teesdale
Frank J. Parsch

On account of the hard climb over the Mammoth Formation the Ranger guides (who were the following Temporary Rangers) -

Donald F. Mattson
Marguerite Lindsley
Edward B. Cogswell
Gordon Cottier

lead approximately ⁴⁴⁸⁴ 5000 tourists across the Formations.

Of the visitors at Mammoth the Formation Guides lead approximately 700 tourists to the Buffalo Corrals, and Park Ranger Peter Lawson reported that approximately 20,000 people saw the Buffalo herd at the corral.

With the Information Office open to the public during the entire month, from 8:30 A.M. to 10 P.M., approximately 11,316 tourists were given information on all matters pertaining to the Park and surrounding districts relative to routes and road conditions.

Rangers on duty in the Information Office gave out:

3919 Rules and Regulations

And sold:

435 Geological Histories
194 Fossil Forests
78 Glimpses of our National Parks
161 National Park Portfolios
53 Topographic and Relief Maps
78 Haynes Guides
1938 Motorists Maps

Through the system recently adopted in checking the automobile tourists in the Public Auto Camps throughout the Park, we have been able to locate cars wanted for numerous reasons in an exceptionally

easy manner. We were able to locate thirty-seven parties at the Public Auto Camps about the Park for a like number of persons entering the Park who desired to meet friends known to be in the Park.

(c) Aid to County Officials

Three parties were located with the sheriffs of West Yellowstone, Montana, and Gardiner, Montana, through this office. Warrants for the arrests of these persons were served after Rangers had apprehended them along the loop roads.

(d) Aid to Forest Service

Forest Ranger McLane, and his assistant, of the Gallatin district, requested that we apprehend Mr. D. G. Smith of Hilger, Montana and Mr. Guy Wilson of Kalen, Montana, who he has an affidavit to show positive proof that the above named party had left their fire burning at Sphinx, Montana, and deliberately ignored personal fire warning. This party was located for the Forest officials and released to them after warrants had been issued by the United States Commissioner of Livingston, Montana.

(e) Lost Articles

The following articles were reported as being lost to Chief Ranger's office during the month:

One suitcase - Phil M. Anderson of Newton Kansas, on Canyon-Morris road.

One pair field glasses - E. B. Hubbard of Livingston, Montana, near Upper Falls.

One cloth purse - Mrs. John Nelson of Ashland, Wisconsin, in Mammoth District.

One pair glasses - R. B. Smith, Leonard Hotel, Butte, Montana.

One Gladstone traveling bag - Miss Little of the Yellowstone Park Hotel Company, on the Old-Faithful-Lake Road.

One Gladstone traveling bag - Miss Morris at Mammoth Hotel

One string red beads - Mrs. Herbert E. Smith, Los Gatos, California, on Mammoth Formation. Recovered by Ranger Krippene and property mailed to owner at her home.

(f) Stolen

Mr. E. L. Baluss of Casper, Wyoming, driving along late in the evening of July twenty-fourth between Norris and the Canyon, was held up at the point of a revolver by two men and relieved of \$60.00 in cash by the bandits. The matter was reported to Park Ranger Roy T. Fraser, who was passing over the road from the Canyon to Norris shortly after the hold-up. Rangers at the Canyon Station and at headquarters were notified, as well as all entrance stations.

It was the belief of the men who investigated the case that Mr. Baluss was held up by men traveling in an automobile through the Park. This belief is substantiated by the fact that a car stopped several hundred feet beyond the point of the hold-up as one of the bandits stepped on the running board after signaling for a ride.

Rangers in charge of Checking Stations at the four entrances were instructed to search all suspicious characters and cars for unsealed firearms immediately after the hold-up. This search resulted in the arrest of Mr. John Herr and Mr. George Oldin of Alpha, North Dakota, driving a much delapidated Ford car. Park Ranger R. R. Wisdom relieved them of a small thirty-two Caliber revolver. The occupants of this car were taken into custody and brought to Mammoth. While enroute to Mammoth Mr. Baluss was given an opportunity to identify the men. Shortly after he had seen them he informed Chief Ranger McBride that they were not the men who were supposed to have held him up.

Investigations were carried out until August first, when it was learned that two men traveling on horseback passed out of the Park over the Cooke City road. These men passed the Soda Butte Station in the absence of Park Ranger Wynn and Temporary Park Ranger Carter.

At the present time we are in doubt about the identity of these men and a search is being made as to their present whereabouts and investigation will be made as to their activity on or about July twenty-fourth.

IV. PLANS ON PROPOSED WORK;

(a) Buffalo Ranch drift fence

Mr. Oscar Roseborough of Gardiner, Montana, has practically completed the Buffalo drift fence from the ridge on Mount Norris

to the rim of Opal Creek. This fence is one of the strongest and most picturesque fences in the entire West and has been constructed at a very nominal figure and with withstand the weather conditions and strain of at least ten years, according to the opinions of the contractor and Buffalo Keeper Lacombe.

(b) Crevice Ranger Station

Mr. Thomas H. Lewis, of Jardine, Montana, has started work on the new Crevice ranger station, under arrangements and agreement made between myself and Mr. Lewis at a figure not exceeding \$350.00. This building is completed with the exception of constructing the roof, ceilings and partitions of the three-room cabin. I have inspected the construction of this building and I am pleased to report that I consider it the best ranger station for winter use in the entire park. The roof has a pitch of almost forty-five degrees and has an extension over the North door of six feet and over all eaves of twenty-four inches.

(c) Buffalo Ranch haying:

Buffalo Keeper B. C. Lacombe, with a crew of twenty men, began haying on the meadows at the Buffalo Farm July twenty-second. The expenditure for the cutting of this hay during the month amounted to \$819.90. The crew has cut approximately three hundred and fifty- tons of hay and has re-stacked about sixty-five percent of the hay in the meadow. This work will be completed not later than August thirteenth if present conditions prevail. No time was lost between July twenty-second and August first on account of weather conditions.

(d) Slough Creek

The harvest of the hay on the Slough Creek meadows began July nineteenth under Winter Keeper Ira D. Fleming. The work at this ranch is progressing rather slowly on account of inadequate supplies. The meadows on Elk Ron Creek are expected to yield a crop of approximately eighty tons. The developments of these meadows will begin with this cutting. Buildings are being erected by Warren . Hutchins of Gardiner, Montana, for the accommodation of crews who will be employed to cut this hay which will be used in holding the Elk in the North districts of the Park during the winter months. The expenditure for the cutting of hay at the Slough Creek and Elk Ron meadows amounted to \$1,241.25.

(e) Yancey's

The harvest of the hay on the Yancey's meadows began July twentieth under my supervision and it is expected that approximately one hundred and twenty-five tons will be harvested. In addition to this cut we have about eighty-five tons in the stacks from last year's harvest.

V. OTHER MATTERS OF GENERAL INTEREST;

(a) Wild Animals

Bears

Park Ranger Sam T. Woodring requested permission to kill a brown bear at the Canyon dump, this bear having been injured in a fight with a grizzly on the night of July twentieth, and was injured so painfully that it was unable to leave the garbage piles. Permission was granted at the Chief Ranger's office. The bear was killed and its carcass destroyed.

Park Ranger Ed Burkett, at the Lake Ranger Station, received reports from numerous auto camping parties that an old female brown bear had been chasing children through the Auto Camps near the Lake Hotel. These reports were found to be true and on the night of July twenty-first Ranger Burkett shot this bear and destroyed its carcass.

The bears at the garbage piles are becoming quite numerous and it strongly indicates that these animals are on the increase. Nineteen were seen at the Canyon on many occasions during the evenings of July; as many as eighteen were seen at the Lake; four at the Upper Geyser Basin; and five at the Mammoth dump.

A two-year old black bear, commonly known as the "Hold-up Bear", has made it a habit of meeting all yellow cars as they cross the Continental Divide on their way to the Lake on each afternoon. Contrary to rules and regulations tourists in yellow cars and private cars fed this bear and while doing so have tied up traffic and many persons feeding the animal have received minor injuries as a result of either teasing him or allowing him to scratch them with his paws. It is impossible to place a ranger at this point on account of traffic conditions at the Thumb Ranger Station and it is recommended that this bear be captured and shipped to the State Agricultural College of Texas, per their request to you during the month of June.

Fishes

One million grayling were received at West Yellowstone and

were planted at Grebe Lake on July 2nd. The Yellowstone Lake hatchery supplied us with approximately 20,000 Rainbow Trout which were planted July fifteenth at Virginia Cascades. This makes a total of approximately 1,025,000 trout planted in the waters of the Park this season.

Stock

Park Ranger Ed Burkett of the Lake Ranger Station, requested authority to kill a packhorse which entered the Park by Sylvan Pass badly effected with distemper. As this disease is contagious there was danger of other horses working with various crews about the Park contracting the disease. This authority was granted from the Chief Ranger's office.

Buffalo Keeper Burton C. Lacombe reported that he impounded a two-year old steer which he discovered in the hay meadows at the ranch on July third. Proper publicity was given the impounding of this animal as expected from present correspondence that the owner would be able to identify the animal.

Park Ranger Hans Larson impounded a stray black calf found on the Parade Grounds at Mammoth July eighth. Notices have been mailed according to the regulations of the Department of the Interior and this animal will be sold at public auction August twenty-seventh unless ownership is properly shown within thirty days of date of sale.

Fires

During the month of July thirty-one reports of forest fires and camp fires were received. I am pleased to report that of this number none of these fires caused this department, nor were responsible for, any expense charged to this department. The fires as they were reported are as follows:-

Four fires July 5th at Canyon and Lake in auto camps, left by ^{me} ~~sagebrushers~~. The violations of our regulations in these cases did not warrant any of the parties being taken before the ^{expense of a trial} Commissioner for trial. They were released through the Chief ^{with reprimands} Ranger's office after reprimands had been given by the Chief Ranger.

^{by 8 am} Campers reported at the Thumb Station that a fire was burning in the Snake River district near Lewis Lake in a heavily wooded section. The trail crew, headed by Henry Anderson, working out of the Snake River Station, was dispatched to the scene of the fire and succeeded in getting it under control after it had covered an area of approximately one hundred square feet.

Two parties of motorists were reprimanded on the same date for leaving their fires.

On July 17th reports were received at the Riverside Ranger Station that a fire was burning three and three-quarters miles West of Madison Junction. Park Ranger Ford Purdy and Temporary Ranger Kaplan distinguished the fire before any damage had been done.

On the following day motorists reported at the West Yellowstone Checking Station that a fire was burning two and one-half miles North of West Yellowstone on the Gallatin County Highway leading through the Park via the Gallatin County Forest Reserve. Park Ranger Ford Purdy succeeded in extinguishing this fire before any damage had been done. The violaters of the fire regulations in the latter two instances were not apprehended as no check was made on the campers in either district who are held responsible for the fires.

^{19th} Tourists crossing the Continental Divide, who stopped at Shoshone Point, were thought to have started a fire at that point through their carelessness with cigar or cigarette stubs. Reports were received at the Thumb Ranger Station that an underground fire was burning at eight o'clock in the evening. Rangers were dispatched from the Canyon, Thumb and Upper Basin Stations and succeeded in extinguishing the fire before it had covered an area of any extent. There was no visible damage.

Temporary Ranger Ferguson, of the Madison Junction Station, reported a fire on the evening of July 28th at the top of Terrace

was reprimanded

Mountain. Park Rangers Purdy and Anderson, and Temporary Ranger Ferguson investigated and found a small camp fire beyond the control of the auto campers who had climbed to the top of the mountain on a hiking expedition. There was no damage done as a result of this fire.

Fourteen auto campers were reprimanded between July 16th and 31st for failing to extinguish their camp fires in our public auto camps.

Six motorists were tried before the United States Commissioner on complaints of leaving camp fires, five of which were found guilty and fined according to the judgment of the Court.

Arrests

The following parties were taken into custody by the Rangers of this Department and brought before the Commissioner, who dealt with them according to his judgment:

C. Bakki, Los Angeles, California, arrested by motorcycle Ranger Emmett S. Matthew, June 30th, tried before the Commissioner on July 1st on a charge of violating the fishing regulations in Yellowstone River. He was found guilty and fined \$10.00 and the costs of the case, which amounted to \$5.50.

Mr. T. L. Nylan of Lovell, Wyoming, was arrested July 5th by Motorcycle Ranger Emmett S. Matthew on a charge of exceeding the speed limits of the Park. He was permitted to continue his trip to Salt Lake City under bond of \$50.00. He reported at Headquarters July 11th for trial and was found guilty of the charge and instructed to pay a fine of \$25.00 and the costs of the case, which amounted to \$5.50.

Mr. Jack Bristol of Cheyenne, Wyoming, was arrested by Motorcycle Ranger Russell Sprinkel on a charge of exceeding the speed limits of Yellowstone National Park. He was fined \$25.00 and the costs of the case, which amounted to \$5.50.

reprimanded
sub X
Mr. Will Donald of Big Timber, Montana, was arrested July 11th by Park Ranger Bishop on a charge of reckless driving and obnoxious conduct. Mr. Donald was given an interview with you and received a severe reprimand for violating our rules and regulations.

Mr. A. B. Ogden of the Yellowstone Park Transportation Company was arrested July 11th by Park Ranger Burkett on a charge of exceeding the speed limits through the public auto camp. He was taken

before the United States Commissioner and fined \$25.00 and the costs of the case, which amounted to \$5.50.

Mr. A. Crease of the Yellowstone Park Transportation Company was arrested July 15th by Park Ranger Burkett for exceeding the speed limit through the Lake Auto Camp. He was tried July 16th and found guilty and fined \$25.00 and costs of the case, which amounted to \$5.50.

Mr. W. G. Fisher of Lexington, Kentucky, was arrested July 16th by Motorcycle Ranger Mink on a charge of exceeding the speed limit of the Yellowstone National Park. He was tried and found guilty and fined \$25.00 and the costs of the case, which amounted to 50¢.

Mr. T. E. Keefe, of the Yellowstone Park Hotel Company, was arrested July 18th by Motorcycle Ranger Needham on a charge of exceeding the speed limit of Yellowstone National Park, for which complaint was not filed against Mr. Keefe. The matter was brought to the attention of the United States Commissioner who severely reprimanded Mr. Keefe for this action.

Mr. Arnold C. Stamm of Detroit, Michigan, was arrested in the evening of July 17th by Temporary Ranger Cummings for reckless driving through the Mammoth Public Auto Camp. His trial was held July 18th and he was found guilty of this charge and fined \$25.00 and the costs of the case, which amounted to \$10.50.

Mr. Homer Rothlitnar of Wapiti, Wyoming, was arrested July 17th by Motorcycle Ranger Sprinkel for exceeding the speed limits of the Yellowstone National Park. He was permitted to proceed to Pahaska on his own recognizance. He reported to the Chief Ranger's Office July 19th for trial. He was found guilty and fined \$25.00 and the costs of the case, which amounted to 50¢.

Mr. L. E. Boyitt, driver of No. 138 Yellowstone Park Transportation Company, was arrested July 15th by Motorcycle Ranger Sprinkel on a charge of exceeding the speed limit in Yellowstone National Park. This is the first case of one of the Transportation Company's drivers having to be brought before the Commissioner this year for violating any of our rules and regulations. He was found guilty of the charge at his trial on July 19th and fined \$25.00 and the costs of the case, which amounted to \$5.50.

Mr. P. J. Ricks of Rigby, Idaho, was arrested July 19th by Motorcycle Ranger Sprinkel on a charge of exceeding the speed limits of the Park. He was permitted to continue his trip around the Park and reported for trial July 22nd. He was found guilty and ordered to pay a fine of \$10.00 and the costs of the case, which were \$5.50.

Mr. W. P. Connel of St. Francis, Kansas, was arrested July 22nd by Motorcycle Ranger Emmett S. Matthew on a charge of leaving his camp fire at the Upper Geyser Basin Auto Camp. He was tried and found guilty of this charge and fined \$10.00 and the costs of the case, which amounted to 60¢.

Mr. W. E. Westlake of Manhattan, Montana, was arrested July 22nd by Park Ranger Bishop on a charge of leaving his camp fire at the Upper Geyser Basin Auto Camp on the complaint of Park Ranger Harrison. He was acquitted of the charge by the United States Commissioner who was not satisfied that Mr. Westlake was guilty of violating any regulations.

Mr. G. B. Selvidge of Billings, Montana, was arrested July 23rd by Motorcycle Ranger Mink on a charge of exceeding the speed limit in the Park. He was tried before the United States Commissioner and found guilty and instructed to pay a fine of \$25.00 and the costs of the case, which amounted to \$5.65.

Mr. A. T. Shane of Idaho Falls, Idaho, was arrested July 24th by Motorcycle Ranger Hollis N. Matthew on a charge of exceeding the speed limit of the Park. He was brought before the Commissioner July 25th and instructed to pay a fine of \$25.00 and the costs of the case, which amounted to \$5.50.

Mr. John Herr of Golvas, North Dakota, was arrested July 24th by Park Ranger Wisdom on a charge of carrying unsealed firearms through Yellowstone Park. He was brought before the Commissioner July 26th and instructed to pay a fine for violating this regulation of \$15.00 and costs of the case, which amounted to \$5.50. Payment of this fine was suspended thirty days on account of the financial condition of the defendant.

Mr. I. H. Denton of Salt Lake City, Utah, was arrested July 27th by Motorcycle Ranger Hollis N. Matthew on a charge of exceeding the speed limit of Yellowstone Park. Permission was granted by the United States Commissioner to try this case by telephone on account of family and business difficulties of the defendant. He pleaded guilty to the charge and paid a fine of \$25.00 and the costs of the case, which amounted to \$5.50.

Mr. H. M. Cady of Billings, Montana, was arrested July 29th by Motorcycle Ranger Needham on a charge of exceeding the speed limits of the Park. He was found guilty and instructed to pay a fine of \$10.00 and the costs of the case, which amounted to \$5.50.

Mr. Jack Charles of Gardiner, Montana, was instructed to report at the Chief Ranger's Office for violating trucking rules and regulations of the Park, following a complaint made by Mr. John G. Grimm of Salt Lake City, who claimed that Mr. Charles exceeded the speed limits of the Park with his truck and prevented him from passing his loaded truck while paying a visit to Cooke City. Mr. Charles was reprimanded by Assistant Superintendent Lindsley and allowed to continue driving a truck on probation.

Mr. R. J. Parker and Mr. N. O. Bowman, both of Long Beach, California, and Mr. Phil Mockel of Townsend, Montana, were taken into custody by Temporary Ranger Paul R. Wylie on July 13th on a charge of violating fishing rules and regulations. These men had caught fish under the size prescribed by the Secretary of the Interior. Existing conditions will not permit us to file a complaint against such violators. You granted them an interview and severely reprimanded them for violating this regulation.

Mr. H. C. Allen and Pleasant Smith of Powell, Wyoming, were taken into custody July 21st by Park Ranger Ed Burkett. Information received at the Chief Ranger's Office established positive proof that these men had been engaged in the illicit traffic of intoxicating liquors. Ranger Burkett was unable to gather evidence which would warrant the filing of such a complaint against these men. Consequently, his instructions were to eject them from the Park at the East Entrance before noon of July 21st.

Complaint was made by Wood and Lawrence Peabody of Seattle, Washington, July 27th relative to Frank Latta, engaged in construction work with Tom Cunningham's crew at Tower Falls, whom they have accused of being cruel to animals. No action has been taken but the complaints made warrant an investigation.

Mr. Frank J. White, Assistant Manager at the Lake Hotel, Mr. R. J. Wells, night clerk, Mr. Thomas D. Dwyer, Head Porter, Mr. W. H. Gruenhagen, bell boy, and Mr. Otto Breil, porter, all of the Lake Hotel, were arrested on the evening of July 29th by Park Rangers Douglas, Woodring, Mead and Temporary Ranger Cummings, on a charge of violating the Volstead Act. Evidence gathered and confessions made in writing were responsible for the opinion of the Court requesting the prosecution of this case to the highest extent. Negotiations are being made to bring United States District Attorney of Wyoming to Headquarters to try these men. They were released July 30th upon the suggestion of the Commissioner and under the guaranty of Mr. W. M. Nichols, of the Yellowstone Park Hotel Company.

Mr. H. Brandon of Long Beach, California, was arrested by Temporary Ranger Cummings July 30th on charge of exceeding the speed limits of the Park. The violation of this regulation did not warrant the affair being brought to the attention of the United States Commissioner. The defendant was reprimanded by Assistant Superintendent Lindsley and permitted to continue his tour of the Park.

Mr. L. J. Spangelo and Mr. Clarence A. Dunn of Riverside, Montana, were arrested July 23rd by Park Ranger Bishop and Temporary Ranger Glynn for failing to extinguish their camp fire near the buffalo corral. They were released on their own recognizance by Park Ranger Bishop, after they had shown they would be willing to report for trial July 30th when Court would be in session. According to their agreement they reported at the specified time and were released on the suggestion of the rangers filing the complaint who believed they had been properly punished through anxiety for failing to extinguish their fire.

Messrs. J. D. Silverman, Arthur Schoenstadt and Carl H. Newhouse of Chicago, and Samuel C. Houston of Pittsburgh, were apprehended at Morris Junction by Park Ranger Fraser under instructions from the Chief Ranger's office, where complaint had been filed against the above named men by Temporary Ranger Mattson on charges of obnoxious conduct and defacement of the formation. Circumstances leading up to the arrest and the inability of the Department to gather all men connected with the case together was responsible for the dismissal of the case.

Deaths & Accidents

The month of July proved to be the highest month in the history of the park for minor and serious accidents. Three deaths were reported at the Chief Ranger's Office, six serious accidents, eight minor accidents and seven collisions constituted the cases dispensed with through this Department during the month of July.

There are as follows:

During the evening of July 3rd, Mrs. H. Cendagorba of Ogden, Utah, slipped and fell into the largest pool of the crater of the Old Faithful Geyser and suffered some serious burns of a third degree nature about the arms, legs, abdomen and breast. The woman, in company with Dr. M. Isnardi of San Francisco, had been on the crater of the Old Faithful Geyser following the ten o'clock eruption and as she was leaving its crater she became confused in the dark and walked into this large pool. Dr. Isnardi pulled her out of the boiling water but the woman in her hysterical condition freed herself from his grasp and fell

in for the second time. Again, she was rescued by the Doctor, who administered first aid treatment to the scalded woman.

As this woman is a Foreigner it was quite impossible to gather the necessary details from her. Officials of the Old Faithful Inn reported that her condition, while very painful, was not serious. She left the Park July 5th under the care of Dr. Isnardi.

Mr. Walker Green of Canada, died July 6th of heart failure while viewing the Grand Canyon. His remains were shipped to his home after embalming had been done at Headquarters.

Mr. B. Fry of Breckenridge, Texas, driving a Ford Roadster from Sylvan Pass to the Lake on July 13th became confused while in the Pass and drove too near the edge of the road, consequently his car rolled approximately one hundred and fifty feet to the bottom of the Pass. Mrs. Fry suffered a dislocated shoulder and minor contusions; the child received numerous abrasions about the head and shoulders. Mr. Fry was not injured. The occupants of the car were taken to Pahaska Tepee in a passing machine and Park Ranger Wisdom was given instructions to refund the entrance fee of \$7.50 for this car.

A party of ^{conservative} foreigners in a Ford car from Iowa, the occupants of which consisted of a man and his wife, drove over the edge of the road eight miles out of Tower Falls on the Canyon-Tower Falls Road on July 15th. The car rolled approximately forty feet where it was demolished, but neither of the occupants were injured by the fall.

Harry Dooley, driver of No. 157 of the Yellowstone Park Transportation Company left the road in Sylvan Pass with his ten-passenger car, killing Mrs. Emma B. Childer of Wichita Falls, Texas, and seriously injuring the following: Albert F. Winstrop, Mrs. Joseph H. Winstrop; Alma, Helen and Florence Winstrop, and Miss Irene Stitz. Minor injuries were suffered by: Joseph H. Winstrop, Edith Slick, Eliza Hyat, Katherine Bond. Driver Dooley suffered abrasions about the face, shoulders and contusions of the right knee.

According to the occupants of the car the driver was using every precaution and was in no way violating any automobile regulations of the Park. After investigations conducted by all parties concerned a decision was reached rendering the accident unavoidable and exonerating the driver.

Mr. Al Whitman, driver of Yellowstone Park Transportation Company, over-turned on the Sylvan Pass-Lake Road at Teton Point on the afternoon of July 25th with a ten-passenger load. The following members of his party suffered injuries: Mr. Leon Hornstein of Chicago, Illinois, internal injuries due to jumping from the car. Mrs. Hornstein and

daughter Charlotte, slight injuries and shock as a result of being pinned under the front seat. Mrs. Charles M. Power of Omaha, Nebraska, two lacerations and punctures of muscles in right side and contusions of the left side and over her scalp. She is also suffering from a badly sprained back. Miss Florence Power, of Omaha, Nebraska, lacerations and contusions of back, arms and legs. Annette Hornstein, internal injuries.

Differences of opinions of the occupants of this car resulted in the dismissal of Whitman from any charge of violating any of the rules and regulations of the Park. It was claimed by the occupants of the car that he turned out too far near the bank of the road to avoid a road grader working at that point. He apparently made no effort to stop his car but his tracks showed that he made every effort to turn it out of its tracks through the sinking road. Mr. Whitman was ejected from the Park July 27th by order of Superintendent Albright.

Mrs. Mary Jacoby of West Hoboken, New York, died suddenly of apoplexy at the Canyon Hotel July 24th. Her remains were treated at Headquarters and the body shipped to her home.

Mr. Dave Hicks of Portland, Oregon, over-turned one and a half miles West of the Thumb Ranger Station on the Old Faithful-Thumb Road July 28th, sliding his car one hundred and fifty feet to the bottom of the Canyon. He suffered three broken ribs, numerous lacerations and abrasions and internal injuries in the fall. His wife, Mrs. Stella Hicks, suffered from a dislocated shoulder, while three other occupants of the car escaped injury. Mr. Hicks could not account for the cause of the accident.

Mr. Thomas T. McCay of Hiawatha, Kansas, with his fourteen year old son, driving from Lake to Canyon July 31st over-turned his Ford car in the Yellowstone River at a point four miles North of the Lake Junction. Mr. McCay and his son were rescued from the river by Mr. H. B. Blair of Livingston, Montana. Mr. McCay suffered a slight concussion of the brain while his son escaped injury. Both occupants were unable to account for the accident.

Natural Phenomena

The activity of the geysers at Old Faithful is reported as follows:

Old Faithful	60 minutes
Daisy	70 "
Riverside	6½ hours
Grand	8 to 10 hours

Giantess	One eruption during the month
Castle	Eleven eruptions between July 1st & July 16th. None observed after that time.
Giant	Erupted the 4th, 15th and 28th.
Mortar	Observed in action 3 times
Lion	From one to eight times a day
Beehive	No activity

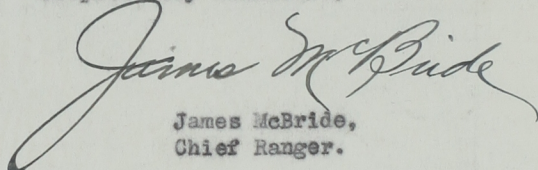
Reports from Assistant Chief Ranger E.T. Scoyen show that the Old Faithful Geyser is throwing large quantities of rock out of its crater at each eruption. The men at the Upper Basin Ranger Station are unable to account for this peculiarity. They are of the opinion that it is worthy of investigation from this office. The question is arising as to whether or not it will affect the activity of the Old Faithful Geyser in the future.

Auto Camps

Public Auto Camps at all the main parts of the Park have been over-taxed during the entire month. We have been unable to accommodate all of the tourists desiring to camp at these points on several occasions.

It is interesting to note that these camps are being patronized by twenty-five per cent more visitors than were records at these points during the 1920 season. Rangers and construction crews are bending every effort to devise means to handle this traffic.

Respectfully submitted,



James McBride,
Chief Ranger.

August 5, 1921.

August 1, 1921.

REPORT ON NATURAL PHENOMENA.

To: Chester A. Lindsley, Acting Superintendent.

From: M.P. Skinner, Park Naturalist.

At Mammoth Hot Springs there has been very little change except that Hymen Terrace is still improving. Jupiter Terrace, Angel Terrace, White Elephant, Orange Spring, and Cleopatra Terrace, have all shown great beauty and activity.

At Norris Geyser Basin: Whirligig and Mud Geysers continue their increased activity; Valentine Geyser continues to play every day or two; Constant Geyser has been seen to play a few times; Monarch Geyser is still inactive; and the New Crater and Minute-man Geysers are still playing normally.

At Lower Geyser Basin: the Fountain Geyser has been inactive but the Great Fountain played normally.

At Upper Geyser Basin there has been practically no change since last month. Old Faithful is playing on an average every 64 minutes; the Daisy is playing finely every 75 or 80 minutes; the Grotto, Giant, and Giantess are playing normally but the Beehive has not played at all this year; the Grand Geyser is still giving wonderful eruptions two or three times a day; the Riverside and Lone Star Geysers are playing regular every seven hours and three hours respectively.

At the West Thumb, two or three small geysers have been quite active.

Copies of Notes on Flowers, Geology, Animals, and Birds for August, are enclosed. These notes, which are prepared by Park Naturalist Skinner, are posted on bulletin boards in hotels, camps, stores and other places in the park where they are seen by tourists, and they are also

Inspiration Point hatched on the 15th and at Grand View a week later. A brood of Mallard hatched on the 1st near Junction Butte, and one of Richardson Grouse, nearby, on the 8th.

Bird songs were heard for the last time: Meadowlark and Robin ~~on~~^{about} 1st; Pink-sided Junco and Audubon Warbler ~~on~~ 7th; Song Sparrow ~~on~~ 10th; and White-crowned Sparrow ~~on~~ the 22d.

Animals: The antlers of the majority of the Elk are not quite grown altho the Mule Deer have completed their growth. Antlers of both species still in the "velvet." Practically all large animals except the Bears and a few Mule Deer about West Thumb and Canyon have retired from the disturbance of the tourist routes. From the number seen, I believe there are about 120 Antelope kids this year. 12 adult wild Buffalo and 4 calves were found near mouth of Timothy Creek. The condition of all animals continues good.

From the early arrival of magpies; the building of winter nests by ground squirrels and chipmunks; and the movements of the Rocky Mountain jays (camp robbers); it seems best to look for an early fall and winter.

August 1, 1921.

REPORT ON SEASONAL CHANGES.

To: Chester A. Lindsley, Acting Superintendent.

From: M.P. Skinner, Park Naturalist.

Botanical: Grasses and other forage made a fine growth up to the middle of July; then the lack of rain stopped the growth and curing "on the stalk" began.

Below the 6000 feet level, the following began to bloom: *Mentzelia* ^{about the} on the 1st; Sun-flowers and Goldenrod on the 20th.

In the neighborhood of Mammoth; large Beard-tongue ^{about} on the 2d; a single spray of Fireweed ^{about} on the 8th; small Beardtongue ^{about} on the 9th; Rocky Mountain Bee Plant ^{about} on the 12th; and elderberries, gooseberries, and red raspberries were ripe on the 26th. Near Tower Falls; the first Twin Flower ^{about} on the 5th; the first spray of Fireweed on the 6th; and great masses of Wild Roses reached the height of their season on the 7th and then declined until the 26th.

On the Park Plateau: the great abundance of Little Elephant blooms was notable until the 20th when the wet meadows they lived on began drying up; thereafter Monkshood and Fringed Gentians were unusually abundant in the same localities. ^{about July} Flowers began blooming: Stone Crop ^{about July} on 9th; Monkshood ^{about July} on 20th; yellow Water Lilies on Isa Lake on the 21st; and Columbines were common on the 2d and a few persisted throughout the month. ^{about} Flowers on Hayden Valley began drying up on the 22d.

Dogtooth Violets, yellow Violets, Lungwort, ^{were} and brilliant Indian Paint Brush ^{observed} on both sides of Mount Washburn on the 6th; and white Phlox and Alpine Forget-me-nots on the summit on the same day.

Birds: The only migratory movements noted were: Brewer Blackbirds began to gather in flocks on the 14th. and the Magpies arrived on 26th.

Almost all our birds were nesting in July. Cliff Swallows were building nests from the 1st until the 26th. Osprey on nests below

August 1, 1921.

REPORT ON WORK PERFORMED.

To: Chester A. Lindsley, Acting Superintendent.

From: M.P. Skinner, Park Naturalist.

the usual
Park Naturalist Skinner prepared ~~a~~ set of monthly notes on flowers, geology, animals, and birds; 49 sets were posted on bulletin boards, and 1921 sets were given out from the Information Office. A few labels were made for exhibits in the Information Office; two bird charts and a few maps were placed *there* the Information Office. About fifty specimens of geological formations were collected for the Museum. Scientific activities in the Park were supervised. The work in the Information Office was supervised closely from the 8th to the 19th and assistance given where needed. 27 talks were given on "Animals", "Mammoth Hot Springs Formation," "Geysers," "Indians," "Birds," "The Whitebar Elk," and other miscellaneous subjects. Data on Natural features were collected daily. Inspections of Forests were made and reported. Other studies pursued by him, resulted in his notes on Seasonal Changes and Natural Phenomena, as embodied in this report. Eight days were devoted to special work assigned by the Superintendent.

(XJ)

Mt. Washburn Building.

The stone building to be used as shelter and fire lookout station Mt. Washburn was started and approximately 50% completed. The building is made of rock laid in cement mortar. It is eighteen feet square of one story with an eight foot square cupola where a fire lookout will be stationed.

Retaining Canyon Walls.

The work of replacing the old log
taming walls along the ^{Yellowstone} river with
permanent masonry walls was
started July 1st, and continued throughout
the month. The new walls are twenty
inches thick at the top and the face given
batter of three inches to the foot.
The rock which is secured from a
quarry nearby, is laid in cement mortar
in a hundred and eighteen lineal feet
retaining wall was completed,
having an average height of eleven
feet and containing 304 perch.
The top of the wall is made level with
grade of the roadway. Spaced sixteen
feet apart, rock piers are extended up
twenty inches above the top of the wall.
Four inch logs are placed on top of
the piers to act as a guard rail

Sprinkling System.

Two auto truck sprinklers and seventeen
se drawn sprinklers were operated
during the month, sprinkling twice
daily about 107 miles of roads on
loop. Several new supply tanks
were installed, flume rebuilt and
system repaired generally.

Dunroven Pass.

uly, st, widening operations were
made in Dunroven Pass. This
improvement, which was started two
years ago will be finished this season.
At the end of the month the steam shovel
had moved ^{a distance of} twenty-nine hundred feet
and excavated approximately 6000 cubic
yards of material, of which about
75 percent was solid rock.

Road Maintenance

Fifteen small crews were stationed
ring the month at different points
the Park to maintain the roads,
grading, installing culverts, cleaning
ditches, and ~~performing~~^{making} general repairs.
Three larger crews, one operating in
East Forest Reserve, another in the
th Forest Reserve and at the other
the West Gallatin ~~section~~ division
maintained the roads in those sections.

Norris Bridge

(County)

Work on the new concrete bridge to
built over the Gibbon River ^{at Norris} was
started and good progress made excavating
the abutments. A temporary log bridge
was built near the ranger station ^(b)
for use while the new bridge is
in course of construction. The old
timber truss bridge was dismantled.

Wolfs + Bridges at Upper Bosim.
New hand railings were placed on
each of the foot bridges across the
rehole River at the Upper Bosim. ^(a)
Repairs were made to the walkway
at Upper Bosim by filling numerous
small washouts that occurred the last
year and installing more and
larger drain tile.